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Assignment: Think of some classroom situation you have experienced (related to method) and have it ready tomorrow ~

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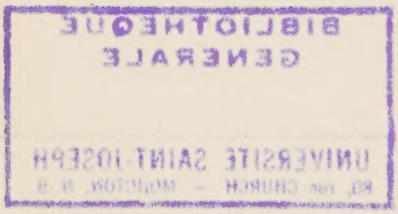

# PROBLEMS
# IN
# CLASSROOM METHOD

A Manual of Case Analysis for High-School Supervisors and Teachers in Service

BY

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INDIVIDUAL STUDENTS AND TEACHERS WHO
HAVE HELPED TO COLLECT AND TO
ORGANIZE THE MATERIAL

# PREFACE

Academic research is proverbially regarded by laymen as the business of finding out what everybody knows and stating it in language that few can understand. The description justly applies to much so-called research in any field. It applies especially to much that passes for research in education, for the reason that the field of education is so new. There has not yet been time to define the problems and the methods of investigation by which genuinely productive research may be identified.

Educational research has thus no well-defined meaning. The term is used to describe the activities of a teachers' committee that constructs a course of study by piecing together various other courses of study. It is also applied — and with far greater propriety — to the sort of study whereby the specialist in a particular field, like spelling, tries to discover the specific causes of misspelled words. Between the two extremes lie many varieties of professional study. Some are highly useful for practical purposes; others serve no practical purpose but contribute to the accumulation of scientific principles. Strictly speaking, the quest for new principles alone deserves the name of pure research.

Were it not for the principles derived by research in the fields of learning and teaching, the solution of classroom problems would be largely accidental. It is none the less an important fact that the findings of pure research have little or no meaning to the average classroom teacher until they are applied to teaching problems. If any one conclusion can be drawn from technical studies of supervision, it is that teachers wish to be shown how

principles apply to specific classroom problems. The mere statement of a principle is not sufficient. There is, accordingly, an important place for the type of investigation that seeks to relate principles to practice by studying classroom problems directly. The need for such investigation is keenly felt by teachers; yet most professional literature concerning classroom teaching is still organized with primary reference to psychological principles of learning rather than to specific problems of teaching. In the present volume this order of emphasis is reversed. Teaching problems are studied directly.

*To describe the methods* by which teaching problems as such may be investigated systematically is the purpose of a companion volume now in preparation, which is addressed to persons interested in applied research in the field of high-school teaching. *To organize the data* with reference to teaching problems is an essential purpose of this book, which is addressed to supervisors and teachers in service. Some forty case problems are supplied in Part I, together with solutions proposed by teachers in service. The solutions are criticized for the purpose of indicating how any teacher may proceed in working out solutions for similar problems that shall meet the particular conditions of the given school, class, and subject. Part II contains a classified list of 424 typical difficulties confronting teachers of *any* high-school subject. The difficulties are followed by suggestions for their solution as obtained from professional literature, from teachers in service, and from teachers in training.

The function of the material is to help the teacher to analyze a troublesome classroom situation into the specific difficulties involved and to work out solutions for each difficulty that shall satisfy the given classroom conditions.

I have applied the term "case analysis" to a technique of investigation that is reflected to a slight extent in the organization

of the materials described. In the companion volume referred to, case analysis is defined and illustrated by numerous applications as a technique for use by research students in the investigation of more fundamental problems in teaching method. Any adequate description of the technique would be inappropriate in the present text, which is not addressed to readers by whom the technique might be applied. Consequently, no theoretical justification of the method of attack appears in the text. A passing reference to case analysis may, however, be appropriate in a preface addressed to the critical reader.

Case analysis, as applied to the more fundamental problems of classroom method, is essentially a systematic formulation of the procedure employed by any student in attacking a specific classroom situation or case. It represents a combination of the two techniques of job analysis on the one hand and theoretical analysis on the other. By defining the research problem in terms of a significant and typical classroom situation, the technique forestalls the academic remoteness from actual teaching conditions that sometimes characterizes theoretical analysis and experiment upon isolated problems of learning. By defining the investigation in terms of standard classroom conditions the technique permits the precise and complete identification of elements involved, which is characteristic of job analysis. Conversely, by applying to the problem the criteria for good teaching derived from theoretical analysis, the labor of deriving such criteria by the laborious process of job analysis is greatly reduced. The determining principles that apply to the given problem may often be arrived at directly by a concensus of experts. When the principles can be so selected, the investigator escapes the large expense and labor required to define efficient teaching methods on the basis of a complete enumeration of teaching and learning activities in general. It is frequently as possible to derive efficient methods for a

given situation from established principles of good teaching as from a complete (and necessarily general) list of teaching and learning activities compiled by job analysis. It is also as frequently possible to derive significant principles from the detailed analysis of a given case as from the more extensive and less specific data obtained from many cases.

The foregoing condensed statement may be clarified by the following summary outline of case analysis as a research technique in the field of classroom method.

1. *Defining the case* — detailed description of a type situation or problem affecting a given group of pupils or teachers for which more adequate methods or solutions are desired.
2. *Analyzing the case* — application of job-analysis technique to identify the specific activities of pupils and teachers involved in the case situation.
3. *Interpreting the case* — selection of principles from standard literature in the fields of psychology, sociology, school organization, and others to serve as criteria in evaluating the specific activities and in locating those that are inefficient.
4. *Collecting solutions* — selection from all available sources of methods that may serve to remove the inefficiencies implied by the criteria and that are susceptible to some objective validation by classroom experiment under sufficiently representative conditions.
5. *Defining conclusions* — formulation of such facts or principles for further study as may be derived from the methods selected and as appear to possess scientific validity.

The limitations of the technique from the standpoint of scientific procedure are sufficiently obvious. Such limitations are somewhat offset by the direct value of the findings to teachers in

service. It is entirely probable that extensive application of the technique, as adapted to problems of different types, would rescue the field of classroom method from the two present evils of inapplicable theory and unintelligent routine. The major problems of classroom method are not at present amenable to purely statistical research. Case analysis represents a procedure whereby data may be collected that are of direct benefit to teachers. The data should also contribute much to the science of teaching method by defining problems to which statistical techniques may more readily be applied.

Analysis, as a technique of investigating educational problems, is commonly criticized for failing to indicate what *ought* to be as distinct from what *is*. To criticize analysis on such grounds is no more just than to criticize standard tests for failing to determine educational objectives. Analysis of current practice in a given occupation like teaching will show what methods are used to reach the objectives that exist. Analysis of current practice is obviously incapable of evaluating the objectives and is equally incapable of finding methods to attain objectives that do not exist.

No case whatever can be made for analysis as a method of determining aims and values. The aims and values of education in a democratic society are, by hypothesis, ever-changing; since an essential characteristic of democracy is its provision for whatever social needs are in danger of being sacrificed to traditional policies.[1] Aims and values that constitute a constructive philosophy of education are thus necessarily beyond the reach of "scientific determination." Such a philosophy can only take shape from the conflict between the individual philosophies of the best philosophical minds. Analysis of current practice is no substitute for philosophical thinking.

[1] See B. H. Bode, *Modern Educational Theories*, Chapter VI.

Analysis may, however, prove helpful to the philosopher by defining the specific problems of current practice that the philosopher must take into account, if practicable aims are to be determined. An entirely abstract philosophy is no philosophy at all. An aim is a mere figure of speech until its relations to current practice in the given field have been made explicit. Hence an adequate philosophy of teaching that gives meaning and direction to scientific studies is dependent upon some sort of analysis for much of the data upon which its conclusions are based.

A philosophy of teaching is thus composed of two major elements, — a penetrating and comprehensive view of human nature and social institutions on the one hand, and an accurate and comprehensive knowledge of current educational practice on the other. Analysis of current educational practice is obviously incapable of providing the former, and it is just as obviously the only reliable means of providing the latter. The profession should recognize the limits within which analysis of current practice may contribute to a philosophy of teaching. The fact should also be recognized that the findings of scientific studies cannot be wisely interpreted except on the basis of the criteria provided by such a philosophy.

Acknowledgments are due primarily to the teachers who have supplied the case problems and proposed solutions for Part I. The teachers' names are not given in connection with the material quoted for the reason that the writer would not feel free to comment adversely if the teacher submitting the material could be identified with the material criticized. Material submitted by the following teachers has been quoted: Miss Ethel Boardman, Miss Mabel E. Bollinger, Miss Ruth B. Carter, Miss Marie Dickey, Miss Frances M. Edwards, Mr. Warren F. Gish, Mr. S. P. Gould, Mr. R. A. Greig, Miss Harriet Hayden, Mr. Henry T. Hoffman, Miss Catherine E. Hubbard, Mr. F. W. Lathrop,

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The following instructors deserve abundant thanks for their help in securing many solutions for the type-difficulties of Part II from practice teachers and from teachers in service: J. Carleton Bell, College of the City of New York; Harold Benjamin, Leland Stanford University; W. F. Dyde, University of Colorado; S. L. Eby, University of Cincinnati; H. G. Hullfish, Ohio State University; H. W. Nutt, Ohio Wesleyan University; W. W. D. Sones, University of Pittsburgh; J. C. Twinem, Geneva College; and R. K. Watkins, University of Missouri.

The writer wishes also to acknowledge his obligations to the trustees of the Commonwealth Fund of New York City for the use of data from the Commonwealth Fund Study of Teacher-training Curricula, directed by Professor W. W. Charters of the University of Chicago. The detailed analysis of teaching made for this Study has supplied evidence to support many significant positions in the present text that are indefensible without such evidence. To Professor Charters himself the writer feels a deep personal obligation for incidental criticism that has clarified thinking and that has helped greatly to define the point of view.

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ings; and second, for indirect assistance through several of his students who have supplied solutions for the problems.

Further specific acknowledgment is due to five classes of student teachers at the University of Pittsburgh who collected a large proportion of the type-difficulties shown in Part II; also to the members of six graduate classes at the University of Chicago who supplied further solutions for the difficulties and helped to formulate techniques whereby classroom problems of different types may be solved by teachers in service. Such techniques appear in Chapter II and at the close of each succeeding chapter in Part I as "procedures for problem solution."

Particular thanks are also due to Professor W. C. Reavis, University of Chicago, and to Professor Henry Harap, Cleveland School of Education, for painstaking and constructive criticism of the manuscript.

Acknowledgments are made in the text to the publishers from whose books materials have been quoted. All direct quotations, of course, are acknowledged. It is possible that some material appears in the solutions to the case problems of Part I for which proper acknowledgments have been omitted. Since this material is quoted from students' reports, the writer cannot be entirely sure that all obligations to published sources have been identified.

In conclusion, the value of the text to the professional reader has at least two serious limitations. These limitations are, first, the extreme generality of the solutions proposed for the case problems, and second, the apparent complexity of the procedures whereby better solutions might be developed independently by the supervisor or teacher concerned. Both limitations are serious and should not be minimized. Both are to some extent unavoidable in a text which undertakes to outline solutions for problems met by any high-school teacher in any subject, class, and school. Experiment showed that neither defect could be remedied with-

out making the text too bulky for use. It was accordingly decided to reserve the more specific treatment of problems and techniques for the companion volume.

Whatever justification there may be for releasing the text as it stands lies therefore in the hope that the present pioneering effort may encourage other texts wherein more specific and adequate solutions may be proposed for the *recognized* teaching problems of a given subject. Such texts in special subject-matter fields should also define simpler procedures for arriving at solutions to *new* problems. There is the further hope that in spite of these limitations the text will prove useful to teachers and supervisors who may apply the general suggestions to specific cases and adapt the "procedures for problem solution" to their individual needs.

D. W.

Chicago, Illinois
June, 1927

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# PART I

## PROCEDURES FOR PROBLEM ANALYSIS

# PROBLEMS IN CLASSROOM METHOD

## CHAPTER I

## PURPOSE AND PLAN

### A. Purpose Defined

A typical problem in a large city school is described in the following statement by a successful teacher of six years' experience:

> My most difficult problem is to adapt the subject matter of the tenth-grade course in American History to the needs of a large class of varied abilities. The problem is complicated by a number of conditions. Each teacher in the school is expected to carry as many as six classes a day, some classes containing fifty pupils. A single teacher meets as many as 250 to 275 pupils daily. There is little or no opportunity for private conference. A teacher is not permitted to detain pupils either after class or after school, nor is any time reserved in the daily schedule for this purpose. For teaching purposes, the class is the unit, not the individual. The mentalities of the class, moreover, range from 80 to 140 I.Q., as measured by group tests. Under such conditions many of the principles and methods of teaching described in educational journals and in courses in education are so impossible to apply that one can hardly read about them with a straight face.

The significance of the last sentence will be felt strongly by any reader who has met the sort of situation described. Methods of teaching must always be selected with reference to existing

classroom conditions. The methods of teaching that conform most closely to the laws of learning are therefore not always practicable. It is important, of course, for the teacher who meets the above problem to know the values of American history for tenth-grade pupils and to know how such values are best realized. Yet, such knowledge alone is not sufficient to solve the teacher's problem. He needs to know what particular teaching procedures may be used in the face of present obstacles to secure satisfactory results, and how to utilize the suggestions found in professional literature by adapting them more specifically to the given situation. The present volume is an attempt to suggest how such needs may be met by teachers in service.

This volume undertakes to propose the typical problems of classroom teaching, the principles which may be used to solve them, and the technique which teachers may follow in working out specific solutions for specific problems met in practice. The second part of the volume contains a classified list of problems that arise in the teaching of any subject. Each problem is followed by a statement of principles suggesting specific solutions. The principles are collected from standard literature, from teachers in service, and from graduate students of courses in high-school method. The first part of the volume discusses forty-two selected case problems in terms of particular subjects. The discussion undertakes to show how the material of Part II may be used to define solutions for any particular classroom problem confronting the individual teacher.

The book, as a whole, is less concerned with what the teacher should *know* about teaching problems than with what the teacher should *do* about them. The present chapter accordingly discusses the need for direct studies of actual teaching problems. A detailed illustration is offered to show how classroom problems must be analyzed before practicable solutions can be reached.

The chapter concludes with a definition of terms and suggestions concerning the use of the text for different purposes.

### B. Summary of Factors Involved in Teaching

The general situation which high-school teachers face may be summarized by brief reference to the various factors that condition and complicate high-school teaching. Some of the factors are relatively permanent; others may be removed by adequate financing and resourceful administration. Any one of them may give rise to specific classroom problems. With the factors in mind, it becomes easier to analyze specific classroom problems from the standpoint of teachers in service.

1. **Administrative factors.** The present volume is restricted to classroom teaching. Problems of administration are excluded. Within the classroom, however, there are many conditions which it is the business of the superintendent or principal to control; for example, the number of pupils taught per teacher per week, adequacy of grading, homogeneous grouping, adequacy of equipment, length of period, size and suitability of classrooms, time and facilities for pupils' study during school hours, opportunities for private conferences with pupils, opportunities for meeting parents, organization and administration of extra-class activities, amount of routine clerical work demanded of teachers, and opportunities to observe the teaching of other teachers.

It is obvious that failure to provide for any one or more of these conditions makes it more difficult for the teacher to secure satisfactory results. "As is the budget, so is the school." An extremely resourceful principal with sufficient authority and an adequate budget may regulate such conditions sufficiently well to enable teachers to do good work. A principal who lacks resourcefulness may fail to provide for any save the conditions that are necessary to keep the school in operation. It is not likely

that any public high-school administration will ever be able to standardize all the conditions mentioned to the complete satisfaction of each teacher on his staff.

The bearing of this fact upon methods of classroom teaching is perfectly clear. When the administration has done what it can to facilitate efficient teaching, the teacher must adapt his procedures to the obstacles that remain. If the class is too large to permit the use of methods he considers effective, he must develop other methods which can be applied to the large class. In other words, the teacher must analyze the existing situation and work out the best solution possible under the circumstances. It remains for specialists to determine how teachers can best analyze each situation and adapt standard procedures to their needs.

2. **The factor of objectives.** The tendency to emphasize objectives as the salvation of erring teachers is responsible for much confusion among teachers of secondary grades. Confusion is inevitable when statements of objectives are ambiguous, as they frequently are. The confusion may be a sign of good omen, provided that the teacher is stimulated to define his own objectives and to harmonize them with objectives proposed by authorities. The confusion is harmful when objectives proposed by authorities and "stressed" by the administration are presented in such general terms as to bear no direct relation to the teacher's actual work.

An objective is simply the statement of a desired result. The result may be described in terms of a single pupil activity, like "translating *miles* into soldier," or in terms of a group of activities, like "learning to translate Latin." The former is the more definite. The latter is the more significant. The more specific and detailed the statement, the more definite it becomes. The more general and abstract the statement, the more comprehensive

and significant it becomes. Hence, the statement of an objective must find a happy compromise between definiteness and significance. A case in point is the different reaction of administrator and teacher to the familiar seven Cardinal Principles of Secondary Education.[1] For the administrator, the principles constitute useful objectives, since they represent the definition by experts of significant social values that the school should foster. The objectives thus help to determine administrative procedures. For the teacher, however, the principles are not sufficiently definite to afford direct help in the selection of classroom procedures.

Monroe[2] classifies the statements of objectives found in professional literature as follows:

| | |
|---|---|
| Immediate objectives | 1. Learning activities to be engaged in, *e.g.*, classroom exercises. |
| | 2. Abilities to be engendered, *e.g.*, abilities developed by means of the exercises. |
| Ultimate objectives | 3. Future behavior described in general terms, *e.g.*, "citizenship," "character," and "worthy use of leisure." |
| | 4. Duties or occasions for the use of abilities, *e.g.*, "home membership," "vocation," and "further study." |

The extent to which the teaching of any subject makes for the attainment of ultimate objectives is entirely accidental until immediate objectives are specified. It is thus confusing when ultimate objectives are formulated before immediate objectives are known for each particular subject. Administrators too frequently ask teachers to organize their work in the light of ultimate objectives before it has been determined by experiment to what extent the objectives are attainable. Assuming that

[1] Bureau of Education *Bulletin*, 1918, No. 35.

[2] W. S. Monroe, "Teachers' Objectives," University of Illinois *Bulletin*, Vol. 23, No. 19.

the ultimate objectives are attainable, still more experiment would be needed to determine the classroom procedures by which the objectives are best realized in the teaching of a given subject. Under such circumstances the sensible course for the teacher to follow is to disregard the ultimate objectives proposed by others until he has defined his own immediate objectives in teaching the given subject and class. The immediate objectives may be then corrected by the ultimate objectives insofar as the latter take into account the existing obstacles and conditions of the teacher's work.

3. **The factor of pupils' maturity.** Closely related to the matter of departmental objectives is the persistent problem of meeting the diverse needs of adolescent pupils. Individual abilities, interests, and needs are highly variable in any unselected group. High-school classes, however, contain the additional element of diverse vocational needs, which for many pupils are urgent. The teacher must accordingly emphasize certain phases of the subject that are useful to pupils who will soon leave school to work. Other phases must also be emphasized which are more useful to pupils requiring a foundation for advanced study in the subject. The teacher must employ certain teaching procedures for immature pupils who require close direction and other procedures for pupils who work best when thrown on their own resources. He must differentiate between pupils whose previous contacts with the subject furnish a useful background and other pupils who have had no such contacts.

Taken singly, each of these adjustments can be worked out with fair success. Taken all at once, they present serious difficulties. The teacher of any typical high-school class must make several such adjustments in teaching any subject. To meet the needs of pupils who differ so markedly in attitude, ability, opportunity for further schooling, and background is thus a severe

challenge. Except for a small minority of extremely resourceful teachers, the needs of certain pupils receive far less attention than the needs of other pupils. All too often the needs are so diverse that in attempting to provide for all the teacher fails to provide for any. "The average pupil," one should remember, is a mere figure of speech.

The complications of high-school teaching resulting from this factor of maturity are many. The solution lies in forming class sections composed of pupils who are as nearly alike as possible, then in the experimental selection of teaching procedures by which the work can be conducted on an individual basis. There is evidence to prove that work can be so organized.[1] As yet, however, few procedures have been developed for the teacher's guidance in adapting such organizations to the actual conditions of the public-school classroom. Only by collecting suggestions from teachers who have worked out such organizations in public-school classes can the procedures become sufficiently explicit for use by teachers generally.

4. **The factor of supervision.** The late Professor Inglis used to remark that the problem of supervision in secondary education is not how to improve supervision, but how to get supervision. Comparatively few high-school teachers receive any classroom supervision whatever. Furthermore, in schools too small to have department heads, it is often considered bad form for one teacher to consult other teachers about personal teaching problems. The resulting complications are serious, not merely for beginning teachers, but for experienced teachers as well. Any open-minded critic can help a teacher to evaluate his own classroom procedures. Without such help the teacher is likely to

[1] Cf. Charles W. Odell, "An Annotated Bibliography Dealing with the Classification and Instruction of Pupils to Provide for Individual Differences." University of Illinois *Bulletin*, Vol. 21, No. 12 (1923).

overlook problems that might readily be solved. The alternative is to study the class objectively oneself and seek the help of other teachers competent to advise.

More serious problems sometimes result from the wrong kind of supervision than from the lack of supervision. It is by no means unusual for a well-meaning principal to confuse a teacher badly by advocating general procedures he has read about and which do not apply to the given class and subject. Rule-of-thumb supervision hurts the teacher quite as much as purely formal teaching hurts the pupil. No general supervisor, much less a principal without adequate training in the analysis of teaching, should attempt to recommend specific methods for subjects with which he is not thoroughly familiar. He may give helpful advice concerning methods of class management. The clear recognition by principals of the classroom problems on which they are not qualified to pass judgment would relieve teachers of much confusion and needless anxiety.

From the teacher's point of view, the nature of classroom problems is largely determined by such factors as have been mentioned. Some of the factors are constant and lie beyond the teacher's direct control. Other factors the teacher can more nearly control, such as the needs of individual pupils, the subject matter to be learned, the teaching methods employed, and the teacher's personal characteristics. But the important fact is that the factors of both types must be reckoned with. The factors which can be controlled should be controlled. The factors which cannot be controlled must be harmonized with the teacher's objectives. Teaching problems must accordingly be analyzed in the light of such factors if obstacles to efficient teaching are to be avoided. Not all teachers have time to undertake the analysis described herein, but the more analysis the better.

## C. The Analysis of Teaching Problems

Analysis of the total classroom situation is a necessary first step toward the solution of any teaching problem. The various factors must be identified before the teacher can tell which may be changed for the better and which must be accepted as inevitable. When, without careful analysis, a single factor is assumed to constitute the difficulty in a given situation, it is entirely possible that the real trouble lies elsewhere. A procedure whereby the total classroom situation may be analyzed is thus of sufficient importance to justify a somewhat extensive and detailed description at this point.

1. **Classroom situation analyzed.** Assume, for example, that the situation described in the opening paragraph of this chapter is to be analyzed for the purpose of finding practicable remedies.[1] Several of the administrative factors involved are specifically mentioned in the description. Few, if any, of these are within the teacher's control. For the present, therefore, we may accept these conditions as inevitable and seek methods of teaching that may best overcome the obstacles implied.

To arrive at such methods one must analyze other factors within the teacher's control; namely, *a.* the immediate objectives for the given unit, *b.* the selection, emphasis, and presentation of subject matter for the given unit, *c.* the teaching procedures appropriate to the given unit, *d.* the relative merits of different forms of class management, *e.* the incentives to be used to secure proper response, *f.* the methods of dealing with individual pupils who cause difficulty, and *g.* the methods by which the teacher may make the best personal impression on the class.

2. **Purpose of the analysis.** The purpose of the analysis is to define the various factors in the classroom situation that

[1] The analysis reported in the following illustration was made by a teacher in service by means of the data contained in Part II of the present volume.

combine to cause the problem. Each factor when defined is likely to suggest other problems that require further analysis before satisfactory solutions can be determined. When satisfactory solutions have been found for the more important problems, the solutions may be combined into a practicable plan of procedure for the classroom situation as a whole. It should be noted that the analysis may be carried to any desired extent, depending upon the number of problems studied. The teacher who has time to analyze only one or two problems will naturally select the most important. The following paragraphs show the problems implied in each factor.

3. **Problems.** *a. The factor of the teacher's objectives.* This factor was analyzed by the teacher concerned into six specific problems. The teaching unit involved was the topic question, *Why did English institutions become established during the colonial period rather than the institutions of other colonizing countries?* The problems relating to choice of objectives were as follows: (1) To what extent should each pupil memorize the essential facts of colonial history? (2) To what extent should each pupil memorize facts concerning the European situation before and during the colonial period? (3) What emphasis should be placed on the study of institutions in England for sake of comparison with American institutions? (4) How much effort should be made to teach an appreciation of early colonial living conditions by extensive reading in such sources as Starr's *American Indians*, Nida's *Explorers and Pioneers*, Tappan's *American Hero Stories*, and the like? (5) How much emphasis should be placed on problem solving, as when pupils search out the historical origins of various modern institutions? (6) To what extent should the slow pupils be held responsible for memory of colonial events as against memory of facts concerning modern institutions?

To reach trustworthy conclusions regarding the foregoing

problems an extensive investigation of the pupils' needs is essential, — an investigation which few teachers in service have the time or opportunity to make. Arbitrary decision is thus necessary if the teacher is to reach conclusions in time to use them. Since a teacher's objectives are largely a matter of personal conviction in any case, it is usually best for the teacher to rank the objectives according to his best judgment of their relative value to the class as a whole.

In the case under discussion, the teacher ranked the objectives as follows: first, to teach the solution of modern problems by means of historical material (No. 5); second, to teach memory of significant events in colonial history (No. 1); third, to teach appreciations of colonial life (No. 4); fourth, to teach slow pupils to understand modern institutions as related to colonial origins (No. 6); fifth, to teach major facts concerning the European background (No. 2); and sixth, to teach information concerning institutions in England. While both the completeness and the ranking of the objectives is open to question by other teachers, there is no reason to doubt that they serve to define the major purposes of the given unit sufficiently well for the teacher concerned.

*b. The factor of subject-matter selection.* Selection of subject matter was next analyzed in terms of the objectives. The following problems were listed as the more troublesome: (1) how to select problems of modern social institutions that are within the experience of the class; (2) how to select readings to give vivid appreciations; (3) how to organize the problems studied so that what the pupils learn will be coherent; and (4) how to select the basic facts which all pupils must learn.

*c. The factor of teaching procedures.* Analysis of teaching procedures revealed the following problems: (1) how to direct discussions so that each pupil will benefit; (2) how to encourage

pupils to criticize; (3) how to direct special reports by individual pupils so that the reports will mean something to the entire class; (4) what form of written exercise will be most helpful in directing all pupils in the solution of problems; (5) how may pupils' methods of study be improved by classroom supervision; (6) how may pupils be taught to make practical use of outlining in organizing written work; and (7) what kinds of test will serve to indicate progress toward each objective without requiring more time for reading of papers than the teacher has time to give.

*d. The factor of classroom management.* Class management presented the following problems: (1) how to present problems for individual study when no mimeograph is available; (2) how to administer oral reports so as to secure an attentive audience; (3) what regulations, if any, should apply to pupils' notebooks; (4) on what basis should marks be assigned; (5) how to reduce the amount of written work necessary; (6) how to administer collateral reading; and (7) how to find time for individual conferences.

*e. The factor of incentives.* Four problems were identified: (1) how to secure and hold the attention of slow and indifferent pupils; (2) how to encourage work beyond minimum requirements by the abler pupils; (3) how to make pupils want to learn about colonial history; and (4) how to make pupils take more pains with written work.

*f. The factor of securing the coöperation of individual pupils.* Coöperation was difficult to secure from four members of the class — three girls whose intermittent conversation disturbed the class, and one boy who continually sought an opportunity to make "wise-cracks" at the expense of classmates. The teacher concluded that these pupils presented no problems which could not readily be solved if individual conferences could be arranged.

*g. The factor of the teacher's personality.* The central problem here consisted in winning the cheerful coöperation of about ten pupils who shirked responsibility and appeared to resent the teacher's efforts to make them prepare assignments. The teacher felt the need of developing greater friendliness.

4. **Selection of problems for solution.** The foregoing analysis is more extensive than most teachers take time to make. Even so, it does not include several problems which one might expect the situation to involve, such as how to make assignments, how to obtain the right sort of supplementary reading material and how to make it available during the class period, how to keep general discussion in a large class to the point, how to conduct drill work upon fundamental facts, how to determine the amount of drill necessary, and how to prevent dishonesty, if any. Yet, the foregoing analysis is sufficient for the practical purpose of selecting a few problems of major importance. The advantage of listing so many problems under each factor lies in the greater assurance that no highly significant problems have been overlooked.

Eight problems were selected by the teacher as most significant in the situation analyzed; namely, one, how to select problems for presentation to the class (*b.* 1); two, how to direct discussion effectively (*c.* 1); three, how to construct written exercises (*c.* 4); four, how to prepare suitable tests (*c.* 7); five, how to administer oral reports (*d.* 2); six, how to administer collateral reading (*d.* 6); seven, how to find time for individual conferences (*d.* 7); and eight, how to make pupils want to learn about colonial history (*e.* 3). On the principle that the greater includes the less, the teacher decided that satisfactory solutions for these problems would apply also to the other problems defined by the analysis and would accordingly apply to the situation as a whole.

5. **Solution of problems selected.** For the purpose of the present illustration it is perhaps unnecessary to reproduce the procedures in detail that were proposed as solutions for the major problems. The following abstract will indicate the general plan of procedure as based on suggestions obtained from other teachers, from books on methods of teaching history and methods of class management, from experiment with different procedures upon the class itself, and from suggestions found in Part II of the present volume.

*a. The first problem.* Problems for study and discussion during the class period (*b.* 1) were selected largely from three sources; namely, from modern issues concerning fundamental institutions such as the home, church, school, legal system, and the like; from textbook discussions of issues in colonial government, and from questions found by pupils in the collateral reading assigned. Each problem was described, where possible, in the form of a brief anecdote or case situation, some real and some manufactured to make the issue more concrete. Each of the problem-situations was followed by a series of questions or directions, from three to eight in number, for the purpose of directing the pupils' study. The following is an abbreviation of an introductory problem:

The settlements of English, French, and Spanish pioneers differed considerably in the form of organization. Two types were evident. One type of settlement consisted of little more than a depot or supply station for expeditions beyond the frontiers. There was not much family life and the main occupation was the search for Indian gold and acquisition of more territory. The other type of settlement was more permanent. Home industries were developed and the essential forms of social life were somewhat highly organized in comparison.

1. Which of the two types of settlement more closely resembles the English settlement?

2. What, if anything, do you consider important about the fact stated in your answer to the above question?

3. What bearing has this fact upon the American legal system, the American attitude toward religion, the American public school?

4. What other connection do you see between the social organization of early settlements and modern affairs and institutions?

5. List the titles and pages of the following books which support what you have said in reply to the above questions. (List omitted.)

*b. The second and third problems.* The problem situations were presented in this form for use as written exercises (*c.* 4) which each pupil might work on independently, thus avoiding the inefficiencies of a general recitation procedure in a large class of widely differing abilities. Since the paragraphs and questions could not be mimeographed, the paragraph was read to the class and the questions were written on the board. Each pupil worked on the questions during the period with the aid of the textbook (Gordy's *History of the United States*) and of other texts which might be borrowed from the teacher's desk. The teacher circulated about the room to supply further explanation to pupils requesting it, to detect errors on pupils' papers, and to discover points of general confusion that might require explanation to the class as a whole.

When all pupils were at work on the exercise, the teacher took the time to call those pupils who needed it to the rear of the room for private conference (*d.* 7). By this means the unadjusted pupils were interviewed. The teacher's desk was placed in a corner, thus making room for two additional rows of chairs at the front of the room.

When the abler pupils finished the exercise, they were allowed to read in texts available for collateral reading, usually in preparation for special reports assigned. When a majority of the class had finished, the papers were exchanged for correction or the questions were discussed with the class as a whole. Discussion was based largely on a comparison of pupils' replies to the same

question. The discussion was therefore confined to questions or topics upon which the pupils could not agree. By this procedure many of the former difficulties in directing question-answer discussions were avoided, since each pupil had given some serious thought to each question discussed (*c.* 1).

*c. The fourth problem.* The problem of constructing suitable tests with a minimum of time for correction of papers was met by limited response tests of two main types. One type was designed to test factual knowledge only, for example:

Write England, France, or Spain before each of the items below to show which country made each claim for possession of the American Continent. Then check the claims you think should have been recognized.

———— 1. The discovery of Cuba and Haiti
———— 2. The decree of the Pope
———— 3. The first discovery of the North American continent
———— 4. The discovery of Florida
———— 5. The fortification of Quebec
———— 6. The defeat of the Dutch

The other type of test was designed to test understanding. This test resembled the class exercise in form and was patterned after the Van Wagenen *Scales in American History — Thought Scale L.*[1] A descriptive paragraph is followed by a list of statements which interpret the paragraph, some accurately and some inaccurately. The pupil checks the more accurate interpretations. The correction of both types of test was simplified by simply looking for checks of the proper items. Since fifty such tests could be marked in fifteen minutes, they were given two or three times a week (*c.* 7).

*d. The fifth problem.* The problem of oral reports was attacked by confining the reports to those pupils who were qualified to present a topic effectively. The former practice of assigning

[1] Bureau of Publications, Teachers College, Columbia University.

reports in order to bring certain pupils into prominence was discontinued. Qualifications to report were determined by the pupil's abilities as a speaker, by the evidence of a well-organized report in outline, and by other evidence to show command of the topic, either by personal experience or by special study of several references. The attention of the class was secured by two simple regulations. For one, each pupil reporting followed his report by asking five questions based on the facts reported and previously approved by the teacher. The questions were asked orally of the least attentive pupils. The pupil's reply to the question was credited as equivalent to a test mark. The other regulation required each member of the class to prepare a question upon the topic to be reported so that such questions could be put to the reporter. This practice, while largely mechanical, did stimulate more careful preparation of reports (*d.* 2).

*e. The sixth problem.* Collateral reading was administered by posting a list of references appropriate to each unit on the bulletin board. The references were listed under two headings — "Concerning Class Problems" and "Interesting References for Voluntary Reading." Pupils in reading references under either head simply reported the fact in writing with a brief comment concerning the bearing of the reading on the class work. Dishonesty in such reports was checked by the teacher's incidental questions on the reading reported by each pupil. A more adequate check was needed but none was found (*d.* 6).

*f. The seventh and eighth problems.* The problem of motivating the unit was attacked by reading vivid accounts of the period as found in sources not accessible to the class. Southworth's *Builders of Our Country*, Higginson's *A Book of American Explorers*, Gordy's *Stories of Early American History*, Parkman's *The Struggle for a Continent*, and others were consulted for

descriptions and anecdotes which held the attention and interest of all but a very few pupils. The teacher read the selections as impressively as he could and allowed some five minutes for questioning. The readings never exceeded ten minutes in length. The attempt was made to enliven the regular class work by relating it to striking personalities and stirring events (*e.* 3). No other specific procedures were recorded as means of developing greater friendliness.

*g. Comment.* The solutions proposed are not described in sufficient detail to make their application to the problem entirely explicit. The outline, however, should suggest how the given problem was attacked. The teacher by whom the procedures were worked out and applied to the class, stated that the major difficulties in teaching the large class had been removed and that final results, on the whole, were satisfactory.

6. **What sort of problem should be analyzed?** The somewhat lengthy illustration just concluded is intended to indicate the sort of classroom problem that teachers may profitably analyze. Classroom problems which teachers may analyze and solve should be distinguished from the more technical problems that are best reserved for the specialist. The distinction may be clarified by the following definition of problems to which the present volume best applies.

The teaching problems that experienced teachers may study to the best advantage are classroom situations which possess one or more of the following characteristics: *a.* the situation is new, unexpected, or infrequent, and is therefore not covered by the teacher's usual procedures; *b.* the situation does not in itself suggest an efficient method of procedure; *c.* the situation requires further acquaintance with the subject matter taught or with the applications of the subject matter to life problems; *d.* the situation demands a knowledge of teaching procedures that the teacher

has not acquired; *e.* the situation requires a skill in organizing and conducting classwork that the teacher has not developed; *f.* the situation demands the use of methods to secure pupils' coöperation that the teacher has not found; *g.* the situation requires a knowledge about individual members of the class that the teacher does not possess; or *h.* the situation involves the expression of certain personal traits that the teacher needs to cultivate.

The definition includes the factors in any typical classroom situation that ordinarily give rise to troublesome problems. The last six of the items represent the six sections into which are classified the 424 specific difficulties of Part II in the present volume. The specific difficulties may thus be used to simplify the analysis of any classroom problem. Such problems, when analyzed, can be solved by any competent teacher or supervisor, provided that the teacher knows what sources to consult and how to obtain helpful suggestions from each source. The findings may contribute little to the science of education but much to the teacher's efficiency and consequent satisfaction.

7. **Where to find solutions for teaching problems.** The sources from which useful data may be obtained by means of intensive investigation are, of course, almost unlimited. The sources available to teachers, however, are comparatively few. The main types of sources are four: namely, professional literature, general literature, members of the profession, and other persons, including parents and pupils. Each of the four groups contains a wide variety of more specific sources that may prove useful in the study of some particular problem. It is here only necessary to mention the sources that are readily consulted by teachers in service and from which directly useful solutions may be obtained for classroom problems as above defined. In using the term " solution " there is no intention of implying that any

such remedies for difficulties in teaching are final. Any person claiming to have reached a final solution for any teaching problem is justly under suspicion. The "solutions" that teachers may obtain from the sources to be indicated are thus more accurately described as hopeful suggestions. The most productive sources of solutions for teaching problems are probably the following, as listed in order of importance and accessibility:

*a. The teacher's own resourcefulness and ingenuity.* By the aid of any list of factors, which are available in many different forms,[1] the teacher is usually able to discover phases of his teaching in need of improvement. For the teacher who is genuinely anxious to improve, the discovery of specific practices in need of improvement is usually enough to bring some improvement about. How far the improvement can be carried depends upon the teacher's standards of achievement; that is, upon his professional conscience and upon the thoroughness with which he collects and evaluates different methods of producing a desired result. Contrary to the proverb, there is much use in worrying. The teacher who carries a problem on his mind and a notebook in his pocket can often invent teaching procedures that are highly efficient solutions.

*b. Other teachers of known expertness in dealing with the particular problem involved.* Teachers of the same school are more likely to know what the problem involves and hence can give more specific suggestions. When no such teacher is available in the given department, teachers of the same subject in other schools may be consulted.

*c. The department head or general supervisor.* Principals who may or may not have taught the given subject are usually able to advise helpfully in matters of class management. Principals

[1] See A. S. Barr and W. H. Burton, *The Supervision of Instruction*, Chapters V, XI, and XV.

of other schools may sometimes be consulted more freely by beginning teachers who hesitate to confess their problems. Such hesitation, however, is seldom justifiable when the teacher needs help.

*d. Books and articles on methods of teaching the particular subject.* Such literature is most helpful with respect to problems in organizing and presenting subject matter, problems of class management peculiar to the given subject, and references to other books wherein particular problems are discussed in greater detail. Books on general methods of high-school teaching should be consulted for problems in pupil direction and class management.

*e. Pupils and parents.* Some pupils may usually be found in any class of normal size who can give honest and helpful suggestions concerning the effect of certain teaching procedures upon the class. Their advice is particularly useful in matters of class management, selection of subject matter, treatment of peculiar pupils, and other matters within their direct knowledge. Some parents are extremely helpful in explaining the causes of pupils' conduct, and in suggesting methods of securing pupils' coöperation.

*f. School and college textbooks in the particular subject, together with popular articles on the units taught.* Familiarity with a wide variety of textbooks is essential in subject-matter selection. Popular articles are useful in problems of motivation, when the purpose is to find material that is directly appealing to certain individuals or to the entire class.

8. **How to obtain solutions from the sources.** Here again it is important to distinguish between the techniques employed by the specialist and the simpler techniques that can be used by teachers. The specialist employs techniques of two types: techniques for the collection of data and techniques for organizing

the data collected. A brief indication of such techniques may be found in the following outline:

*a. Techniques employed by the research student.* The simpler techniques used in the investigation of teaching problems may be listed as follows:

(1) Techniques for *collecting* data
  (*a*) Recorded analysis of personal experience in the classroom.
  (*b*) Recorded observations of teaching procedures used by other teachers.
  (*c*) Recorded interviews with persons possessing desired information.
  (*d*) Correspondence with persons possessing desired information, including the securing of any written material such as test data from pupils, replies to questions from teachers, returns on check lists, data blanks, and the like.
  (*e*) Reading, including both primary sources (as in vocabulary studies of textbooks) and secondary sources (the solutions or helpful information explicitly stated in the test).

(2) Techniques for *organizing* data
  (*a*) Classification of data for purposes of interpretation.
  (*b*) Preparation of forms in order to evaluate data collected, *e.g.*, check lists, rating scales, and tests.
  (*c*) Selection and arrangement of data for application to problems.

*b. General procedure for problem solution by teachers.* The foregoing techniques may well be used by teachers informally to solve immediate classroom problems. Their efficient use, however, usually demands more time and special training than many teachers possess. It is accordingly wise to simplify the pro-

cedures to the point at which teachers in service may use them, and the following chapters present such procedures adapted to the solution of particular types of problems. A general procedure, which applies to any teaching problem, is offered here for illustration.

The major steps in obtaining satisfactory solutions from the sources mentioned are shown in the following outline. The steps are probably not described here in sufficient detail to be successfully applied. The outline, however, may serve to indicate the general procedure that is presented in greater detail in later chapters.

(1) Identify the specific difficulties in a given class at a given time by
   (*a*) Writing out detailed descriptions of the more troublesome classroom situations.
   (*b*) Consulting lists of standard elements in any classroom situation (see Appendices A and C) and adding other difficulties suggested.
   (*c*) Consulting lists of typical difficulties in teaching the given subject (see list of difficulties in English, Appendix F), and by
   (*d*) Asking a competent supervisor to check the list of difficulties for completeness.

(2) Group together the specific difficulties that involve the same teaching procedures, such as the difficulties arising in
   (*a*) Selecting, emphasizing, and presenting subject matter.
   (*b*) Planning and directing classroom learning activities.
   (*c*) Managing class routines.
   (*d*) Securing pupils' coöperation.
   (*e*) Developing personal traits of individual pupils, and
   (*f*) Developing one's own teaching personality.

(3) Select the group of difficulties considered the most serious, study them in the light of what you wish to accomplish with this class and what you know about the abilities and interests of the individual pupils; then list the possible solutions that occur to you.

(4) Examine any comprehensive list of typical procedures in teaching, such as may be found in Part II of the present volume, and select other solutions that apply to the problems.

(5) Examine standard texts on the given subject and on the management of high-school classes and add any other hopeful suggestions found to the solutions already listed.

(6) Refer the list of solutions to a supervisor or to other successful teachers for criticism and additional suggestions. Where necessary, refer the list with full explanation to an expert, either directly or by correspondence.

(7) Select for experiment the more promising solutions that bear upon the first group of difficulties and apply these first to the class, then proceed with other difficulty groups in the same way until results are satisfactory both to yourself and to the supervisor.

### D. Definition of Terms

Certain terms employed in the volume are given a somewhat restricted meaning. Brief definition in advance may help to clarify the discussion to follow.

1. **Analysis.** Analysis means the breaking up of a situation or process into its component parts. The term is also used more technically to refer to any list of items that may be combined into a larger whole. For example, classroom teaching is analyzed

into a series of specific problems contained in Part II of the present volume. Any one of the problems might be further analyzed by listing the specific activities or sub-problems or methods that are involved in the problem as it appears in some actual classroom situation.

2. **Problem.** The term " problem " as applied to high-school teaching refers to any situation that the teacher finds difficult to manage. The situation may be general in character and involve many minor difficulties, or it may present only one specific difficulty. The point of emphasis is always the teacher's attitude toward the situation. In other words, any situation that is found to be troublesome by a significant number of teachers may be regarded as a problem.

3. **Methods or procedures.** The terms " method " and " procedure " are both used to refer to the teacher's classroom activities, *i.e.*, what the teacher does in the classroom. " Method " is used more frequently to describe ways of performing separate operations in learning or teaching. " Procedure " is used to describe the ways of carrying on the learning or teaching process as a whole, which includes many operations.

4. **Units.** The term " unit " is applied to a part of the high-school course which is organized about some single principle. Morrison's definition [1] covers the use of the term in the present volume. There is, however, this difference, that units for public high-school courses have seldom been organized to the point of definiteness and coherence possible under laboratory school conditions. The term is thus applied in the text to organizations of subject matter which by no means satisfy the conditions of Morrison's definition. The reader will not go wrong if he understands the term " unit " to mean any coherent body

[1] H. C. Morrison, *The Practice of Teaching in the Secondary School*, Chapters III, XXX, *et passim.*

of subject matter that is unified by its close relation to some significant concept or skill to be learned, and which ordinarily receives from one to three weeks of the pupil's classroom time. A normal half-year course consists of from five to ten such units.

The terms explained below differ from the above in that they apply exclusively to the types of material contained in the present volume.

5. **Factors in teaching problems.** The term "factor" is used to distinguish certain major elements that are involved in any classroom situation. Six major types of teaching problems are revealed by the classification of the difficulties reported by teachers in service. The six major types consequently represent factors of any classroom situation. Any teaching problem becomes easier to solve when analyzed in terms of each factor.

6. **Type-difficulties.** The term "type-difficulty" is applied to the sixty-nine problems under some one of which each of the 424 specific problems reported by teachers has been classified. The type-difficulty is a difficult teaching activity which is sufficiently general to apply to any high-school subject and course.

7. **Specific difficulty.** The term "specific difficulty" is used to distinguish difficulties that have been analyzed from difficulties that have not been analyzed. The list of difficulties found in Part II is composed of 424 specific difficulties. The specific difficulties are classified under the sixty-nine type-difficulties. The type-difficulties, therefore, include the specific difficulties.

8. **Solutions.** The term "solution" is applied to the suggestions obtained from professional literature, teachers in service, and teachers in training with regard to the methods by which the type-difficulties are best met. The suggestions should not be accepted as solutions that are in any sense final. Strictly speaking, the so-called "solutions" are merely suggestions or

principles by means of which satisfactory solutions for a given problem may or may not be worked out by the teacher concerned.

9. **Cross references.** The term " cross reference " is used to indicate references to such other type-difficulties as usually arise in connection or combination with any one type-difficulty in an actual classroom situation. The table of cross references on page 256 shows the other type-difficulties that are most frequently related to any single type-difficulty on the basis of the 424 classroom situations reported.

10. **Case problems.** As used in the text, " case problem " applies to the description of a classroom situation containing one or more type-difficulties. The case problems form the substance of Chapters III to VIII. The " case problems " differ from the " difficulties " listed in Part II, in that the case problems cover the actual classroom situation, whereas the difficulties are merely statements of difficult activities involved in such situations.

11. **Procedure for problem solution.** The term " procedure for problem solution " is applied to the plans that are recommended as a means of solving classroom problems of the six major types. Chapters III to VIII each present procedures which apply respectively to the solution of problems found in sections one to six of Part II. For example, Chapter III presents a procedure for the solution of problems in selecting subject matter; Section I of Part II contains an extended list of specific difficulties which the selection of subject matter involves.

## E. How to Use the Book

1. **Students of high-school teaching.** The purpose and plan of the text have been explained and illustrated in the present chapter. Its general plan implies that the study of *teaching*

problems differs in many important respects from the study of problems in *learning*. The methods whereby normal pupils learn most efficiently do not always in themselves suggest methods that the teacher can apply successfully under the normal classroom conditions of the public high school. Furthermore, many of the classroom problems that the high-school teacher has to solve must be studied by each teacher in terms of the actual classroom situation — notably problems in the selection of subject matter, problems of classroom management, problems of motivation, problems arising from the peculiar needs of individual pupils, and problems arising from the teacher's personality. The direct attack upon teaching problems, as such, is accordingly based on these assumptions.

While they are clearly incomplete from a scientific standpoint, the data collected and organized in the present volume can be shown to include all of the more significant problems in classroom teaching.[1] There is urgent need for other studies to be made within each high-school subject that may permit greater definiteness in the treatment of "solutions." Teachers in service have been found to benefit more directly by data as herein presented than by data that are not organized in terms of problems met in the classroom. Literature on teaching is seldom so organized at present. There is consequently much work to be done by teachers and supervisors who are interested in studying the teaching problems of their special fields. Such studies should indicate what the typical classroom difficulties are, what standard solutions have been found for each typical difficulty, and what procedures are most useful to teachers in service as a means of adapting standard solutions to given classroom conditions. The

[1] By comparison with the complete analysis of teachers' activities prepared in a study of teacher-training curricula financed by the Commonwealth Fund of New York City and directed by W. W. Charters of the University of Chicago.

significant *teaching* difficulties of any one department can only be explored by the coöperative efforts of teachers and supervisors in recording, solving, and reporting their solutions for the problems that arise.

2. **Teachers in service.** Experienced teachers can make best use of the analysis in Part II by following the directions contained in Chapter II. Two procedures for problem-solution are there presented in some detail. The first applies to teachers who have located a difficulty which they need help in solving. The second applies to teachers who are unable to locate their difficulties in teaching a given class. The discussion of case problems in Chapters III to VIII is intended to show how the contents of Part II apply to the solution of actual problems. Systematic use of the table of contents and the index will simplify the location of material that applies to the classroom problems in which the teacher requires guidance.

3. **Teachers in training.** Inexperienced teachers may use the material to supplement standard texts on methods of high-school teaching, whether applied to high-school teaching in general or to the teaching of specified subjects. The contents of Part II may be used as case material to which the principles discussed in the training course may be applied. For example, the discussion of principles regarding the construction of tests may be applied to the difficulties that teachers report in the construction and use of tests. The solutions which follow the difficulties may be analyzed in terms of the principles found in the various references studied. The contents of Part II may also be used as a basis for the investigation of actual teaching problems. The problems met in practice teaching or observed in the classes of other teachers may be investigated by the procedures illustrated in connection with the various case problems discussed in Part I.

4. **Supervisors.** The volume is useful to high-school supervisors as a source of suggestions to be passed on to teachers. On account of the scope of the problems discussed, the principles proposed for solution of the problems in many cases need to be explained by the supervisor before the teachers can apply them. The fact that the important principles of teaching are organized with direct reference to typical classroom problems makes it easier for the supervisor to show the teacher how to apply the principles to the conditions of a given class.

The volume undertakes to meet the problem of high-school supervision more directly, however, by the emphasis placed on technique. Writers of texts on supervision have been advising high-school principals for some time that their primary business is supervision of classroom teaching. There are some principals who have qualified themselves to give expert assistance in problems of instruction and who also have sufficient time for such assistance, because they can delegate the details of school administration to competent subordinates. Such principals are rare exceptions. The fact has been repeatedly demonstrated that an overwhelming majority of high-school principals are too burdened with school administration to study the teaching problems of all departments. The fact is equally obvious that no single person is qualified to give expert advice without such study. The principal is therefore, generally speaking, disqualified by the nature of his position for the service he is commonly expected to render; namely, the direct solution of specific teaching problems in each high-school subject.

What *can* be expected of the principal under such conditions is the ability to direct his teachers toward the solution of their own problems; that is to say, he should have an adequate knowledge of technique. The specific classroom problems met by teachers of each subject are too varied and complicated for

him to solve. The techniques or procedures whereby teachers may undertake to define and solve their own problems are, in contrast, much easier both to study and to administer. The various "procedures for problem solution" presented in the following chapters apply perhaps equally well to the problems of any subject and teacher. Such procedures, however, demand more energy and careful planning than many teachers will supply without the principal's encouragement and direction. It is accordingly the writer's belief, based upon considerable study of high-school supervision, that the principal's success as a supervisor depends upon his familiarity with such procedures. Just insofar as he concentrates upon the problem of *directing* teachers in the coöperative study of their own classroom problems, will the principal succeed both in improving instruction and in meeting his purely administrative responsibilities.

5. **Limitations of the text as a whole.** The text of Part I has at least three obvious limitations; namely, the inadequate solutions proposed for many of the case problems, the superficial criticisms of such solutions, and the complexity of the "procedures for problem solution." Part II has the weaknesses inherent in any restricted list of problems; namely, the problems are of unequal importance and are not likely to include all the significant problems met by any one teacher.

These deficiencies could not be avoided in one volume without exceeding the desirable limits of space. Moreover, the inadequate solutions reported by teachers in Part I provide good case material for students of supervision and students of high-school teaching who may be stimulated to prepare better solutions for one or more given subjects. The procedures for problem solution are likewise presented in order that they may be improved by experiment. Representative problems also may more readily be collected for a specified subject on the basis of Part II.

# CHAPTER II

## PROCEDURES FOR PROBLEM SOLUTION[1]

### A. Survey of Common Practice

The purpose of the chapter is to outline procedures that supervisors, teachers in service, and teachers in training may put to practical use in the solution of classroom problems. Illustrations of each procedure are supplied in some detail in order that the teacher may select the more useful features and so adapt the procedure to the local conditions which an efficient solution of the problem must meet. The end in view is the teacher's self-improvement in classroom teaching.

1. **Typical methods of supervision.** It is apparent from the above statement that the purpose of the procedures discussed is identical with the purpose of school supervision. The large and rapidly increasing literature on supervision is largely concerned with the means of helping teachers to improve classroom practice. It is therefore appropriate to mention the respective merits of the typical agencies of supervision.[2]

[1] The material presented in this chapter is somewhat technical and is not essential to the understanding and use of other chapters. Procedures are described for the use of inexperienced teachers, experienced teachers, and principals, respectively, in solving their typical problems. The procedures need not, however, be employed unless conditions require a somewhat systematic analysis of the teacher's work as a whole.

[2] A sufficiently detailed account of the organization and methods of supervision may be found in Barr and Burton's *Supervision of Instruction,* Chapters II, V, VI, XI, and XII.

*a. Faculty or departmental committees.* Committees are appointed to study and report upon designated problems of general concern, such as revision of curricula, matters of school policy, and problems in organizing the work of the given department. The reports of such committees, when sufficiently substantial, are frequently published by the school authorities for the guidance of new teachers in the system. Assuming a sufficient amount of initiative on the part of the committee members and teachers generally, such study of common problems is highly beneficial to the members of the committee, and sometimes to other teachers as well. As an agency of supervision, however, the faculty committee is ineffective unless the teachers themselves select the problems to be studied. When only those problems are studied which appear significant to a large number of teachers or to the administration, there is every likelihood that the problems of most importance to individual teachers will be disregarded.

*b. Observation of other teachers.* Teachers obtain much help from observing other members of the same staff and teachers in other schools. Observation, in many cases, is even more useful than demonstration by a regularly appointed supervisor. For high-school teachers, at least, observation has the advantages of being more economical and more easily administered. Comparatively few individuals are competent to demonstrate methods of teaching in more than one high-school subject. Intervisitation by teachers of a given department is thus likely to suggest more new ideas than any one general supervisor can furnish. It is obviously necessary to overcome teachers' objections to being observed. When teachers visit each other freely, the best methods soon become common property.

*c. Demonstration teaching.* Supervisors of particular subjects and grades can usually help teachers most by demonstrating

effective ways of meeting troublesome situations. The demonstrations may cover a series of typical teaching situations planned in advance, or they may be given at the teacher's request. The latter are usually more helpful. Demonstrations commonly consist in occasional attempts by the supervisor to "show the teacher how" to carry on classroom activities which the teacher does not always feel the need for. It is usually best when the demonstration is suggested by the teacher as a means of self-help. The demonstration should reveal a method of attack rather than an operation to be sedulously imitated.

*d. Meetings of teachers from several schools at teachers' "institutes," conventions, or regional conferences.* Such meetings formerly consisted in listening to addresses by local school officials or by authorities in various departments of school work. More recently the teachers' convention has made provision for departmental meetings within the membership. Teachers of the same grade or subject form their own organization which meets in conjunction with the parent organization to discuss the reports of elected committees upon work carried on since the last meeting. This type of conference, patterned after the program of the National Education Association, is an obvious improvement over the conference which is confined to the hearing of lectures. The value, however, is largely inspirational. The size of the groups necessarily prevents consideration of the actual classroom problems confronted by individual teachers.

*e. Teachers' meetings.* Principles and methods applied to classroom problems of different types are often presented for discussion by the supervisor and staff of a particular school. In the high school, departmental meetings are more useful than general meetings because there is more emphasis of teaching problems and less of routine administration. The value of such meetings depends upon the chairman's skill in stimulating coöper-

ative work upon a few genuine problems rather than mere discussion of the work in general. In the experience of a representative group of high-school teachers, the departmental meeting that is organized for coöperative work is rare. The discussion meeting is all but universal.

*f. Use of ready-made analyses.* Ready-made lists of activities in teaching a particular subject are highly useful to some teachers. J. M. Brueckner, for example, reports a detailed list of the teaching activities involved in a spelling unit [1] from which the teacher may select and apply whatever activities the conditions require. Although few such analyses have been made in the teaching of high-school subjects, this approach to the solution of teaching problems is perhaps the most promising of all. It is certainly the most objective and, hence, less dependent upon the supervisor's resourcefulness. A complete and properly-organized list of the specific activities involved in teaching a given unit of subject matter enables any teacher to benefit by all that the experience of other teachers has brought to light. The selection of appropriate activities from such a list becomes then a matter of individual experiment under the supervisor's guidance.

2. **An evaluation.** A ranking of the six supervisory agencies by high-school teachers in service shows them to vary widely in merit. The returns are not sufficiently valid to be cited here as evidence, for the reason that the teachers' rankings were clearly affected by the manner in which a given type of supervision had been applied in their experience. None of the teachers had experienced the last type mentioned. On the whole, the returns suggest that teachers rank the six supervisory agencies in the order in which they are listed.

While no great significance is attached to the rankings, they are somewhat consistent with a fact which all supervisors soon

[1] *Elementary School Journal*, Vol. XXVII: 25–40 (Sept. 1926).

discover, namely, that the sort of direction most needed by teachers in service is concrete advice concerning the solution of specific classroom problems. Wherever the supervisor can offer a general principle by which similar problems can be solved in the future, such principles are highly useful. Yet, the fact remains that principles unaccompanied by specific and successful application to a given problem are seldom clearly understood. The value of any supervisory method accordingly depends upon the directness of its application to the teacher's immediate needs.

On this basis it is easy to explain the teachers' preference for the first of the six methods listed. The small committee, consisting of teachers in the same school and department, can attack specific problems more readily than a larger group. The larger the group of teachers, the larger and less tangible the problems discussed.

The preference for observation as against demonstration is less easy to explain. The explanation probably lies in the fact that few teachers have ever seen demonstrations of specified methods in their own subjects by a high-school supervisor. Since the expert teachers in a given locality are well known, observation is usually a more effective means of becoming acquainted with new and efficient methods in the particular subject.

If it is a fact that most teachers consider teachers' conventions more useful than teachers' meetings in a given school, the preference is a reflection on the business taken up in the teachers' meetings. The smaller groups can undoubtedly solve immediate problems to better advantage, provided the meeting is used for this purpose. As usually administered, however, the teachers' meeting is concerned largely with routine. Whatever help teachers obtain from each other in the solution of teaching problems is secured most often by incidental conversations among

two or three teachers. When meetings of the entire staff are devoted to discussion of teaching problems, the problems must necessarily be so general as to have some interest for the teachers of all departments. This tends to exclude problems of special interest to any one department. The teachers' convention is at least more interesting and less likely to emphasize administrative details.

That the lowest rank should be assigned to standardized outlines is also consistent with the principle. Detailed and well-constructed outlines for high-school courses are scarce. Material prepared for the teacher's guidance is usually confined to a detailed syllabus of subject matter, with an indication of time allowances and collateral references. Assignment and guide sheets to accompany the text are also sometimes included. Materials of this character are often helpful in planning the general organization of the work. Yet, material which represents merely what ought to be taught, is of little direct value in overcoming the obstacles that arise in teaching it. The more recent courses of study, however, contain more adequate analyses of material.[1]

3. **A conclusion.** The foregoing discussion postulates that many high-school teachers are more urgently in need of self-help than of directions supplied by persons unacquainted with their immediate problems. Each of the six agencies of supervision becomes a means of providing useful information whenever the teacher's problems are clearly defined and whenever the number of teachers is so small that each teacher has a chance to obtain the information desired. The ideal remedy for teachers' difficulties is the omniscient supervisor to whom the teacher may go for help in analyzing problems and for explicit advice in their

[1] For example, the syllabi published by the curriculum committees of Denver, Colorado, and of St. Louis, Missouri.

solution. Yet, the departmental organization of high-school work renders this remedy a forlorn hope. Too few general supervisors are qualified to solve teaching problems and to teach others how to solve them in all high-school subjects. The number of persons so qualified will grow smaller as the subjects increase in number and complexity. It thus becomes necessary for the teacher to consult many different sources and to bring the sources to bear on specific problems, one at a time. The desired help may be obtained from available sources if the sources are wisely chosen. The teacher, however, must supply the initiative. The individual teacher is the only single person in the high-school organization who can discover what his difficulties are. Others may know better how to meet them.

The next step toward the assistance of high-school teachers in service is to develop procedures whereby teachers may help themselves. Textbooks may be used to suggest general principles of teaching the given subject and of managing high-school classes. General supervisors and administrators may indicate wherein a given teacher is weak and may help the teacher to define the problems in need of solution. Experts in teaching the given subject and other experienced teachers may suggest efficient procedures which the teacher wishes to find. Yet, neither textbook, supervisor, nor expert alone can find and solve the classroom problems of each teacher. The only apparent alternative is to standardize a procedure by which different kinds of help may be obtained from several sources by the teacher himself.[1]

[1] It is a significant fact that a "Bibliography of Secondary Education Research," 1920–1925, U. S. Bureau of Education *Bulletin*, 1926, No. 2, reports no more than two pages of titles that concern specific problems of classroom method in 82 pages of running titles. This indicates the need among research students for techniques whereby such problems may be attacked. The need among teachers for a procedure whereby best practices may be collected and applied to particular personal problems is even more acute.

4. **Problems vary in scope.** The same classroom situation often presents different problems to different teachers; hence, the difficulty of presenting ready-made solutions in textbook form. The extent of the teacher's resourcefulness and experience in teaching determines the " size " and, consequently, the character of the problem. The classroom problems reported by beginning teachers are found to be general in scope and are largely concerned with personalities. Problems reported by experienced teachers are more specific and more technical because of greater skill in analysis and more definite objectives. Consequently procedures that the beginning teacher finds entirely satisfactory are often unsatisfactory to the experienced teacher. This fact implies that the beginning teacher needs help primarily in analyzing classroom situations. When a given situation is analyzed into typical problems for which solutions have been found, the inexperienced teacher can more readily apply such solutions to the given situation.

## B. Procedures Defined

Three different approaches toward the solution of classroom problems are usually necessary to meet the needs of principal, experienced teachers, and inexperienced teachers, respectively. Since the problems of each position differ in scope, the procedures which may be used to solve the problems must likewise differ. The nature of the different approaches may be shown by a simple illustration.

The principal receives complaints from parents to the effect that pupils are assigned more home-work than they can possibly cover. The approach which the principal needs to make to the classroom problem involved is first to obtain the facts concerning the amount of home-work assigned. His next move should be to present the facts to his teachers for careful study. Perhaps

the facts are that most of the class time is given to the discussion of home-work which only a few pupils have prepared. The principal then will need to help his teachers define the classroom problems resulting from pupils' failure to complete home assignments. When such problems are located, the teachers may coöperate in their solution. By appropriate readings, discussion, and some classroom experiment the teachers should recognize the desirability of some form of directed study during the class period. When a general policy has been approved by the staff as a whole, the principal may stimulate and direct the teachers of each department in working out the details of procedure for their respective subjects. The principal or general supervisor thus needs a procedure that teachers may follow in making a coöperative study of common problems. (See Procedure C, pp. 60 ff.)

The experienced teachers of the school may have somewhat settled convictions regarding the necessity for extensive home-work. All will agree that home-work should be reduced or eliminated if some other and equally satisfactory method can be found to make pupils complete the work assigned. They are fully conscious of classroom problems resulting from unprepared assignments. They believe, however, that more serious problems would arise if home-work were not required. Any teacher in this state of mind is ready to define the problems anticipated in a particular class. He may then proceed to collect suggestions by which the problems might be solved. If, in seeking the solutions, the teacher does not encounter other problems of greater seriousness, the suggestions he obtains are likely to improve his teaching considerably. Yet, to obtain useful suggestions, the teacher also needs a procedure which will direct him to the most promising sources and indicate how the information may best be applied. (See Procedure B, pp. 53 ff.)

The inexperienced teacher, or the teacher in his first year or two of experience, has classroom problems of a somewhat different sort. His teaching procedures are determined more largely by what he remembers of his experience as a high-school pupil, by his reading, and by what he is told by other teachers. He is more concerned for the present with the personal impression he makes on his pupils than with the attempt to evaluate different teaching procedures as such. His attitude toward "principles of teaching" is likely to be uncritical, if not openly intolerant. Yet, this teacher has problems in teaching — many of them. He is also capable of planning methods of overcoming the problems, if the more urgent problems can be separated out from the complex he calls "teaching." The urgent problems are usually revealed when the teacher takes the trouble to evaluate his various teaching activities by considering their effectiveness as applied separately to each pupil in the class. Many self-rating scales are of very little use in locating problems because they apply to the class as a whole. When teaching methods are rated in terms of an entire class, the ratings are seldom sufficiently accurate to reveal the teacher's inefficiencies. There is, consequently, need for a procedure that the teacher can use in defining classroom problems on the basis of individual pupils' responses. (See Procedure A, below.)

### C. Problems of the Beginning Teacher

1. **Procedure A: To define major difficulties in teaching a given class.** The purpose of the procedure to be outlined is to enable the individual teacher to locate major points of difficulty. Teachers vary considerably in their ability to specify their difficulties. The extent to which difficulties can be specified depends upon at least three conditions, namely, upon the number and seriousness of the obstacles to good teaching, upon the objectives

or teaching standards of the individual teacher concerned, and upon the teacher's ability to analyze a classroom situation objectively. Generally speaking, the last two conditions go together. The teacher whose standards are high is better able to recognize his own deficiencies than the complacent teacher whose standards are usually low. Of the several hundred teachers whom the writer has asked to specify teaching difficulties, those who "have no difficulties" have been, with few exceptions, the least promising teachers. There is, however, an important difference between feeling dissatisfied with one's work and being able to identify specific points which need improvement. The beginning teacher usually undergoes a period of despair in attempting to find specific causes for a general dissatisfaction. Teachers in this confused state of mind, whether experienced or inexperienced, are best helped by the advice of a skillful and sympathetic supervisor. When no such advice is available, the following procedure is often a satisfactory substitute.

The procedure, in brief,[1] consists in applying a check list of typical teaching activities to the troublesome or nonprogressive pupils in a given class. The activities are stated in the form of questions answered by yes or no for each pupil. The answer "yes" means that the given activity is successful when applied to some one pupil. The answer "no" means that the given activity is not successful when applied to that pupil. By deciding for each activity on the list whether it does or does not succeed with each pupil, the unsuccessful activities are clearly revealed. By simply counting the number of "no's" for each activity, the teacher obtains a sufficiently reliable indication of the relative effectiveness of the different activities employed. Whenever a super-

[1] The procedure is described in greater detail in D. Waples, "A Technique for Investigating Classroom Method." *Journal of Educational Research*, April, 1925, XI: 254–268.

visor is available who is closely enough in touch with the teacher's work, the supervisor may profitably rate the teacher in the same way. A comparison of the teacher's judgments with those of the supervisor will make for a more accurate analysis.

2. **Use of the check list in defining problems.** The accompanying table illustrates the use of the check list as applied to the classroom situation described in the first paragraph of Chapter I. It will be noted that the eight problems selected for solution (page 15) are included among the items against which most of the ×'s are recorded; namely, the questions numbered 3, 6, 16, 17, 19, 22, 28, and 43. The other questions which received a large number of negative replies, as shown by the number of ×'s, are also closely related to the problems selected. It is not to be expected that a mechanical checking of the list will take the place of the teacher's judgment in defining problems. Yet, a comparison of the problems selected by fifty-three teachers, both with and without the check list, shows plainly that judgments based on the check list are the more accurate. The check list is helpful both in defining problems in need of attention and also in selecting those pupils whose responses are unsatisfactory. Both problems and pupils may then be studied.

3. **Obtaining solutions for problems defined.** A procedure to find solutions for the problems defined is presented later for the use of experienced teachers. (Procedure B, pp. 53 ff.) When the problem pupils in the given class have been identified, the checking will suggest the nature of the pupils' difficulties. Methods for removing the pupils' difficulties may then be worked out with the supervisor on the basis of suggestions contained in Part II of the text as indicated by the page references following the questions checked. When the classroom problem does not yield to this treatment the teacher himself can safely select such of the steps in Procedure B as are

## TABLE I

SPECIMEN APPLICATION OF THE CHECK LIST TO A TENTH-GRADE HISTORY CLASS

| *Question Number* | *No. of X's* | *No. of O's* | *Pupils* | | |

| | | |

practicable under the given conditions and likely to produce satisfactory remedies for the given problem.

The most convenient source of solutions, however, should be found in Part II of this text. The sixty-nine questions composing the check list shown in the table are derived from the sixty-nine type-difficulties presented in Part II. Having determined which of the questions of the check list receive the larger number of negative replies or ×'s, the teacher can turn to the corresponding type-difficulties by means of the index and consult the solutions proposed for each. Because the suggestions which follow the difficulties in Part II are stated in general terms, it is usually necessary for the inexperienced teacher to receive help in working out specific applications to the given class. This help may often be obtained from experienced teachers of the subject.

4. **The check list.** Each of the following questions may be applied to each pupil in a given class, but labor can be saved by omitting all questions that do not imply difficulties and all pupils who are making satisfactory progress. Hence, the first step is to mark out all questions that are irrelevant. Replies to the remaining questions for *each* troublesome pupil should then be checked as follows: ×, meaning "no"; 0, meaning "cannot decide"; and no mark at all, meaning "yes." When the checking is complete, add the number of ×'s for each question to obtain an index of the relative importance of the sixty-nine type-difficulties in this particular class. Also add the number of 0's to determine items about which more information is needed. The checking should be done on cross-section paper bearing the numbers from one to sixty-nine on the left margin and the names of the pupils across the top of the sheet as shown in Table I. This arrangement provides one row for each question and one column for each pupil. The ×'s and 0's may also be added for each column to show, respectively, the pupils who fail to respond and the pupils

about whom more information is needed. The sixty-nine questions are standardized for application to any high-school class. The symbols in parenthesis following each question refer to the type-difficulties of Part II where solutions for the given difficulty are proposed.

1. Has your own command of the subject matter of this course been sufficient at all times to meet the needs of this pupil? (I. A) page 264.

2. Does this pupil obtain a clear idea of new material from your prepared explanations at whatever times the new material is introduced? (I. B) page 266.

3. Does this pupil relate the subject matter to his own life experiences closely enough to indicate that the subject matter is adapted to his needs? (I. C) page 270.

4. Does this pupil usually proceed with the work assigned without requiring repetition of any part of the assignment? (I. D) page 277.

5. Does this pupil recognize the coherence of topics which are presented at different times? (I. E) page 280.

6. Does this pupil read collateral references on his own initiative and relate them to the work of the course? (I. F) page 285.

7. Do your illustrative examples enable this pupil to understand principles more easily than when the principles are stated in abstract terms? (I. G) page 289.

8. Does this pupil respond favorably to the brief talks and readings by which you supplement material contained in the textbook? (I. H) page 292.

9. Do the specific difficulties of this pupil indicate that the material which he most needs has been sufficiently emphasized in your teaching? (I. I) page 294.

10. Does this pupil understand your incidental explanations clearly? (I. J) page 297.

11. Does this pupil form sincere appreciations of the subject matter presented? (I. K) page 300.

12. Does this pupil's response in the classroom indicate that you have planned his work to his best advantage? (II. A) page 309.

13. Does this pupil respond to questioning by analyzing his own difficulties? (II. B) page 313.

14. Do this pupil's oral and written statements receive sufficiently helpful criticism? (II. C) page 317.

15. Does this pupil criticise his own work and the work of other pupils freely? (II. D) page 320.

16. Does this pupil keep to the point in oral and written discussion? (II. E) page 322.

17. Does this pupil hold the class audience in making oral reports? (II. F) page 325.

18. Does this pupil learn from oral exercises the points which the exercises are intended to teach? (II. G) page 327.

19. Does this pupil learn from written exercises how to apply a given principle? (II. H) page 332.

20. Does this pupil use care in selecting the best words to express a given idea? (II. I) page 336.

21. Does this pupil recognize the interrelation of different elements of the course? (II. J) page 338.

22. Does this pupil receive the individual direction in study which enables him to overcome his own learning difficulties? (II. K) page 341.

23. Does this pupil find your explanations adequate? (*i.e.*, neither too lengthy nor too brief). (II. L) page 346.

24. Does this pupil voluntarily organize his written work by means of outlines? (II. M) page 349.

25. Does this pupil undertake drill work with a clear idea of the standard to be met and persevere until the standard has been reached? (II. N) page 351.

26. Does this pupil review his work voluntarily? (II. O) page 355.

27. Does this pupil react favorably to group tests upon the work covered? (II. P) page 359.

28. Does this pupil find your use of English beyond criticism for correctness and clearness. (III. A) page 367.

29. Were you able to call this pupil by name on the second day of his presence in the class? (III. B) page 369.

30. Does this pupil begin class work promptly? (III. C) page 371.

31. Is this pupil easily controlled in the classroom by abrupt questions on his behavior? (III. D) page 373.

32. Does this pupil study independently without bothering others? (III. E) page 373.

33. Does this pupil usually have on hand the necessary materials for his work? (III. F) page 378.

34. Is work assigned to this pupil at times most helpful to him? (III. G) page 380.

35. Does this pupil show satisfactory improvement in his use of English? (III. H) page 382.

36. Does this pupil participate satisfactorily in the discussion following oral reports? (III. I) page 384.

37. Is this pupil efficient in his use of notebooks? (III. J) page 386.

38. Is this pupil tested by tests which apply to each of the important abilities he should develop in the course? (III. K) page 389.

39. Does this pupil find fault with the marks he receives on written work? (III. L) page 392.

40. Is this pupil able to discover and correct significant errors in his own work? (III. M) page 396.

41. Does this pupil coöperate well in all the work of the course? (IV. A) page 401.

42. Is this pupil able to give sustained attention to his work? (IV. B) page 404.

43. Does this pupil show satisfactory initiative? (IV. C) page 407.

44. Is this pupil sufficiently courteous? (IV. D) page 410.

45. Does this pupil take sufficient pains with his written work? (IV. E) page 413.

46. Does this pupil show satisfactory improvement in his efforts to avoid ungrammatical speech? (IV. F) page 415.

47. Does this pupil complete assigned work on time? (IV. G) page 417.

48. Does this pupil attend class regularly? (IV. H) page 419.

49. Does this pupil refrain from causing unnecessary disturbance? (IV. I) page 421.

50. Is this pupil honest in his dealings with you and with classmates? (IV. J) page 424.

51. Is this pupil sufficiently self-confident? (V. A) page 431.

52. Does this pupil subordinate himself to the group so that he is not overzealous about unimportant matters? (V. B) page 434.

53. If a bright pupil, is he sufficiently industrious? (V. C) page 437.

54. If a dull pupil, is he sufficiently industrious? (V. D) page 439.

55. If a conscientious pupil, is he sufficiently bright to do the work? (V. E) page 443.

56. If this pupil is bright, is he honest? (V. F) page 446.

57. Does this pupil do class work of different kinds with the same degree of success? (V. G) page 449.

58. Do this pupil's humorous remarks contribute to the good feeling of the class group? (V. H) page 451.

59. Does this pupil repress any personal animosities he may feel? (V. I) page 453.

60. Does this pupil refrain from making flippant references to sex matters? (V. J) page 456.

61. Is this pupil free from personal peculiarities requiring special attention? (V. K) page 458.

62. Do your contacts with this pupil increase your self-confidence? (VI. A) page 465.

63. Does this pupil recognize your authority in the classroom? (VI. B) page 468.

64. Has this pupil a friendly attitude toward you? (VI. C) page 470.

65. Would this pupil coöperate if you were to express "righteous indignation"? (VI. D) page 473.

66. Have you shown sufficient interest in this pupil's personal problems? (VI. E) page 475.

67. Does this pupil regard you as being fair? (VI. F) page 477.

68. Does this pupil credit you with a kindly sense of humor? (VI. G) page 480.

69. Have you successfully attempted to share your interest in the subject with this pupil? (VI. H) page 483.

## D. Problems of the Experienced Teacher

1. **Procedure B: To collect possible solutions for classroom problems.** The procedure here proposed for the use of experienced teachers has been developed through the coöperation of some one hundred and fifty teachers in service, each of whom has applied the procedure to one or more significant problems. Each of the steps contained has been found useful in solving problems of certain types. Not all the steps, however, need be followed in the solution of any given problem or by any one teacher. The teacher by whom the procedure is applied will naturally omit the unnecessary steps.

For the sake of clearness in explaining the procedure, the ten steps are first listed in the form of directions. The directions are then illustrated. Further illustrations are supplied in subsequent chapters.

2. **The procedure in brief.** Before actually following the directions below, read each of the ten steps with a given classroom problem in mind; then mark such of the steps for omission as may not apply to the particular problem or situation.

1. Write out a clear description of the total classroom situation wherein the difficulty occurs. Include all significant details. The foregoing check list (of Procedure A) will help to make the description complete.

2. Read down the list of type-difficulties (page 49) and note all that directly apply to the situation. No more than ten type-difficulties are usually needed to cover the situation.

3. Turn to the pages of Part II which discuss the first type-difficulty noted. Then check the *specific* difficulties (under the type-activity) that apply to the situation. Copy down any of the suggestions following the specific difficulties that you consider useful. Proceed in the same way with the other type-difficulties noted.

4. Read the "summary statement of principles" to decide which other type-difficulties should be examined. Then look up these other type-difficulties and copy down any other useful suggestions found.

5. Group together such of the suggestions as belong to the same teaching operation or such as can be applied at the same time.

6. The procedures thus grouped are stated in general terms. The next step is to work out specific applications to the particular pupils, subject matter, and other conditions of the given class. The result should be a definite plan for actual classroom use.

7. If you have difficulty in working out satisfactory applications, help may sometimes be found in the literature of general and specific methods. Consult the table of contents and index of standard texts for discussions that apply to the procedures you have planned to use. A more convenient, and sometimes more efficient, means of finding the specific applications is to show your list of solutions to some other experienced teacher of good judgment and ask for better solutions and more useful applications to the given problem.

8. Apply the procedures as you have planned them, taking one group of procedures at a time.

9. Record the results as objectively as possible after each group of procedures has been applied. A record is usually adequate if it shows the number of pupils whose responses to the procedure are satisfactory. Where the original difficulty is confined to only one or two pupils, other criteria must, of course, be employed.

10. The first attempt to use the procedures thus planned is usually disappointing. The attempt should be considered successful, however, if it reveals a number of specific ways in which the new method of attack may be more closely adapted to the existing conditions. Other teachers in sympathy with the general plan of procedure can usually suggest ways of handling the particular points of difficulty. Such teachers may sometimes be reached by correspondence when none are available for personal interview.

3. **Procedure B illustrated.** It is seldom necessary to apply each of the ten steps to any one classroom problem. To illustrate each step it would be necessary to discuss several problems. The six chapters following describe many applications of Procedure B. The present illustration is accordingly confined to the steps involved in solving one highly typical problem. The problem chosen is the one discussed in the preceding chapter and

analyzed in the table on page 46. While each step of the procedure receives some comment, the essential steps here are 2, 3, 4, 6, and 7.

*a. Step 1.* The description of the problem on page three has the merit of clearness. It includes the factors which are the immediate cause of the difficulty. The factors mentioned, however, are largely beyond the teacher's control. The difficulties involved in the actual teaching process are not specified. Since the teacher concerned has the teaching difficulties well in mind, it is perhaps unnecessary to record them. A written description is necessary whenever the teacher is in doubt as to what the specific teaching problems really are. The detailed statement is also essential when the problem is to be presented to others for help in analyzing it into points of greatest difficulty.

*b. Step 2.* The type-difficulties that serve to analyze the problem are shown by Table I (page 46) to be as follows: Adapting subject matter to the needs of the class (I. C), developing initiative in collateral reading (I. F), forming sincere appreciations (I. K), keeping discussion to the point (II. D), administering oral reports effectively (II. F), constructing written exercises (II. H), finding time and methods for supervision of individual study (II. K), and constructing efficient tests (II. P). Other problems involved in the situation are closely related to those listed. The eight type-difficulties accordingly become the points at which the problem may be attacked.

*c. Step 3.* The first of the eight type-difficulties noted is (I. C) analyzed on pages 270–276 of Part II. Thirteen specific difficulties are involved. Of these thirteen, the following five were checked as directly relevant to the given situation: how to determine what parts of the course are most useful to the class (No. 1); how to determine the extent to which certain types of material need to be emphasized (No. 4); how to simplify a

given topic to the mental level of the given class (No. 5); how to present particular topics with neither too much nor too little detail (No. 9); how to present abstract principles in concrete terms when pupils vary in their ability to understand the abstraction (No. 10).

The suggestions copied down from the "proposed solutions" for each of the five specific difficulties may be inferred from the outline of solutions reached, pp. 16 ff. The suggestion from specific difficulty No. 1, regarding the selection of situations most useful to the class, was noted as important. Specific difficulty No. 4 suggested the idea of using tests and exercises to determine what types of material need to be emphasized. Testing each type of material indicates when it has been sufficiently well learned to serve the purpose of the unit. The notion of pre-tests to discover how much the class knows about the unit before teaching it, was obtained from specific difficulty No. 5. The suggestion that classroom explanation may be confined to the difficulties which pupils meet during individual study, was found in No. 9. The suggestion that a series of illustrations is needed to present a principle effectively was noted from No. 10.

How to select pertinent suggestions from the material found in Part II should be evident without following through the remaining seven type-difficulties. For most purposes it is sufficient simply to check in the margin the suggestions under each specific difficulty which seem useful. The checking should be carried through each of the selected type-difficulties.

*d. Step 4.* Eighteen cross-references are listed in connection with the first type-difficulty selected, namely, "How to adapt subject matter to the needs of the class" (I. C). Each of the references specifies another type-difficulty that has been found to occur frequently in adapting subject matter to pupils' needs. The solutions proposed for the other type-difficulties are thus

likely to apply to the original type-difficulty, which in this case is I. C. It will be noted that only four of the eight type-difficulties selected in step 2 are included in the eighteen cross-references. The remaining fourteen type-difficulties were accordingly examined for additional suggestions. Of these, five type-difficulties were found to apply to the problem; namely, making assignments (I. D), making the subject coherent (I. E), emphasizing material needed by part of the class (I. I), directing individual work (III. E), and establishing a coöperative attitude (IV. A). Each of the five were read and the useful suggestions noted. The cross-references given for the other seven type-difficulties, noted in step 2, were not used, since they duplicated those already examined.

*e. Step 5.* The suggestions noted were organized into six groups; namely, those concerned with (1) the selection of subject matter and its organization in the form of problem exercises, (2) the supervision of pupils' study of the exercises, (3) group tests, (4) oral reports, (5) collateral reading, and (6) motivation of the unit. The grouping of the suggestions is outlined in the account found on pages 16 ff.[1]

*f. Step 6.* The suggestions obtained by steps 3 and 4 should next be specifically applied to the given pupils and subject matter. For example, the suggestions regarding selection of useful content were specifically applied in the construction of problem exercises.[2] The description and illustration of such an exercise appears on page 16, *a*; the suggestions concerning supervision of study were applied as shown on page 17, *b*;[3] the suggestions concerning testing appear on page 18, *c*;[4] those

[1] Each group is described in the paragraphs numbered to correspond with the groups as here listed.

[2] From type-difficulties I. C, II. E, and II. H.

[3] From type-difficulties II. E, II. H, II. K, and III. E.

[4] From type-difficulties II. P. and III. K.

concerning oral reports, on page 18, *d*;[1] those concerning collateral reading on page 19, *e*;[2] and those concerning motivation on page 19, *f*.[3]

The teacher's experience determines how far the planning need be carried. When a general suggestion applies about equally well to any subject and class, as is frequently the case, step six presents no difficulty. General suggestions, however, are often meaningless until the application has been worked out in detail. The suggestion "employ problem exercises as a basis for individual study and discussion during the period" is meaningless until suitable exercises based upon the given material have been actually prepared for class use. There is obviously no benefit from deciding what should be done unless the teacher does it.

*g. Step 7.* In the problem under discussion the teacher did not find it necessary to consult professional literature or other persons to any considerable extent. In seeking forms of class organization better suited to individual study during the period, he made a careful study of H. C. Hill's articles on the teaching of history (*School Review* XXVII : 680–94), H. L. Miller's *Directing Study*, and H. C. Morrison's *Practice of Teaching in the Secondary School*. Help in the construction of written exercises and appropriate tests was received from J. A. Wiley's *Exercises in Supervised Study* and G. M. Ruch's *The Improvement of the Written Examination*. Aside from incidental discussion with other members of the staff, the teacher obtained no specific help from other persons.

A teacher of less experience, however, would be unwise to proceed with so extensive a reorganization without having it criti-

[1] From type-difficulties II. F, II. G, and III. I.
[2] From type-difficulties I. D, I. F, I. I, III. E, and III. G.
[3] From type-difficulties I. H, I. I, I. K, and IV. A.

cized by other experienced teachers of the subject. As a general formula in seeking such criticism, the following questions are useful. After describing the classroom problem the teacher asks, " Would this method help to overcome the difficulty? If so, how should it be applied? What other difficulties might I expect when I try to apply the method? Do I need to prepare the pupils in any way before the method can be safely used? " If another teacher of good judgment can be induced to give well-considered replies to such questions, the relatively inexperienced teacher will be greatly safeguarded. To obtain explicit advice it is well for the general plan of procedure to be outlined in writing and given to the critic in advance of the interview. When the interview takes place, the teacher receiving the criticism should take notes of important points.

*h. Step 8.* This step needs no comment other than a caution against undertaking radical changes in routine procedures to which pupils have become accustomed.

*i. Step 9.* This step involves selection of the most practicable type of record. Written tests are usually the best indication of pupils' learning. Tests do not, however, always indicate the success of the teacher's method of class management, controlling habits of attention, and other important factors. For a check upon such procedures, it is better to persuade another teacher to count the inattentive pupils at regular periods, say every ten minutes or oftener. When this is impossible, the teacher may try to make his own count. Procedures that apply only to the treatment of individual pupils' attitudes can seldom be checked objectively. The teacher's impression of the pupil's attitude is usually sufficient.

*j. Step 10.* This step is self-explanatory.

4. **Summary.** The foregoing illustrations of the ten steps are intended merely to show their general purpose. The explana-

tion is probably not sufficiently detailed to show how each step applies to each type of classroom problem. In making practical use of the procedure, the reader will find help from the discussion of concrete case problems to be found in the following chapters. By turning to the chapter devoted to problems of the type under investigation, the teacher will find examples which make the method of attack more explicit.

### E. Problems of the Principal or Supervisor

1. **Procedure C: To direct teachers in the definition and solution of problems.** The high-school principal meets many problems in his capacity of general supervisor. His difficulties are due to several factors. For one, he is seldom sufficiently acquainted with the subject matter of each department to meet teachers on even terms. When more than five or six subjects are taught in the school, no supervisor can give expert advice in the teaching of all subjects. Another troublesome factor is the high-school teacher's attitude toward supervision as such. High-school teachers as a class have only recently become tolerant of supervision. Taken generally, the progressive teacher may be said to welcome expert supervision, yet the principal must move cautiously in bringing about changes in teachers' classroom methods. High-school teachers are by tradition and training so identified with the subject matter of their respective departments that, in any group discussion of teaching problems, each tends to regard the teacher of another subject with some distrust. Not until a principal has given convincing proof of non-partisanship and open-mindedness can he expect the teachers of different departments to coöperate actively in the study of common teaching problems.

To disarm departmental suspicion is thus the principal's first task. He must place himself in the position of an advisor who

gives non-technical advice and help only upon request and, apparently, without much caring whether or not the advice is followed. It is extremely difficult for even a specialist in the teaching of a given subject to alter the objectives of an experienced teacher by direct recommendation. It is still more difficult for the general supervisor. The principal must accordingly bend every effort toward securing the coöperation of his staff before making any suggestions whatever concerning methods of classroom teaching. It is by no means established that a principal should ever volunteer suggestions concerning methods of instruction, unless he is unusually well versed in the subject matter and is fully acquainted with the work of the teacher criticized. What the principal may do, however, and with perfect good will on the part of the staff, is to organize and direct teachers in their study of common and individual problems.

In any school of sufficient size, the principal's best ally in the improvement of classroom practice is the department head. The established fact that few, if any, principals are able to devote more than one-quarter of their time to classroom visitation and conference, makes direct supervision necessarily ineffective. Any principal can become better acquainted with teachers' problems by devoting this time to a few departmental representatives. He can outline policies directly, evaluate their criticism, and secure their help in carrying out the policies adopted. He can take time to collect evidence and explain it, allowing each representative to consider it at leisure. The smaller group removes the necessity for the time-consuming diplomacy upon which the principal's direct contacts with other teachers depend for success. To appoint departmental chairmen who will serve on the principal's cabinet is thus an obvious means of directing classroom practice without incurring resentment.

The procedure to be outlined provides for supervision through

the department heads but may also be applied without their assistance. Taking the size of the average staff into account, comparatively few high schools have more than one teacher for subjects other than English, social science, and mathematics. In schools having fewer than fifteen teachers the appointment of department heads is sometimes unwise. The principal of a school enrolling from three hundred to five hundred pupils, with a staff of from ten to seventeen teachers, confronts a typical situation. His time is usually filled with administrative details, his staff includes some inexperienced teachers each year, and the problem of improving classroom practice is serious. The following procedure has been developed and applied largely in schools of this type. In larger or smaller schools the application is easier.

2. **The procedure in brief.** As in the case of Procedures A and B, already outlined, the principal by whom the following procedure is used should omit whatever steps are not useful under the existing conditions. The procedure can often be simplified by adjusting it to the immediate needs of the teachers concerned.

*a. Step 1.* Present the plan for criticism. When the staff is organized under department heads, refer the procedure herein outlined to the department heads for discussion and criticism. When no department heads are appointed, call a staff meeting and have departments consisting of more than one teacher appoint a temporary chairman. In a staff of fewer than fifteen teachers, form discussion groups of not more than four or five teachers each, with a chairman for each group.

*b. Step 2.* Present the program of study shown below as effectively as possible. Distribute a mimeographed outline of the plan, explain it briefly, and call for discussion. Then refer the matter for action at a later meeting.

*c. Step 3.* Adapt the following outline to the conditions of the particular school: [1]

*Purpose of the study:* To locate difficulties in the classwork of different departments and courses and to find satisfactory methods of removing the difficulties.

*Organization of the study:* Duties of contributing groups:

*Classroom Teachers*

1. To collect the difficulties met in teaching one or more courses.

2. To prepare as many solutions as possible for each difficulty.

3. To report the difficulties and solutions to the group at each regular meeting (preferably bi-weekly).

4. To work with the other members of the departmental group at the general weekly meetings in the effort to find better solutions for the difficulties reported.

5. To undertake such reading and classroom experiment as may help in selecting adequate solutions for the difficulties.

*Group Chairmen*

1. To collect and edit the suggestions received from teachers for presentation to the group. This involves (*a*) following up such teachers as may not have submitted suggestions on time, (*b*) referring back to the teacher such difficulties or solutions as may not have been submitted in sufficient detail to be entirely clear, and (*c*) organizing the material for the conference in such a manner that essentials will be noted.

2. To act as chairman of the (bi-weekly) group conferences. This involves (*a*) reading all difficulties submitted and determining by vote of the group which difficulties are considered most significant, (*b*) reading proposed solutions of selected difficulties and calling for criticisms and additional solutions, and (*c*) reporting to the general conference on the major conclusions reached in the group conferences.

[1] For a more detailed description of this plan see D. Waples, "A Program for the High-School Teachers' Institute," *School Review*, XXXIV: 199–211. Passages are here quoted by permission.

*Principal or General Supervisor*

1. To visit such classes as he is invited to visit.

2. To confer, by appointment, with such individual teachers as may wish to confer.

3. To assist in the planning of methods whereby solutions may be reached.

*d. Step 4.* Ask each teacher to submit at the next meeting a list of the most serious teaching difficulties encountered during the interval. Each difficulty should be stated in detail and illustrated by a concrete situation. The description of the difficulty should be followed by a list of the best solutions for the difficulty that the teacher can propose.

*e. Step 5.* Collect the difficulties submitted and combine them into one list for rating. Mimeograph the list and distribute it to the teachers for checking. The teachers should mark with the figure "3" the items considered most difficult. The items of no difficulty should be marked "1." The other items may be marked "2." By adding the numbers given to each item by each teacher, a sum is obtained for each item. The sums then indicate the relative difficulty of the items for all teachers. The same method may be used to determine the relative frequency of the items so that difficulties seldom met may be disregarded. When the items are then listed in order of difficulty, those which a majority of the teachers consider to be most important may be selected for further study.

*f. Step 6.* Present the selected difficulties to the conference in order that solutions may be worked out by each group of teachers independently and during the regular meeting. Departmental groups may meet elsewhere if they prefer. The solutions found acceptable to the group should be written down by the group chairman.

*g. Step 7.* Collect and criticize the solutions with specific directions for their further study. When this is difficult for the

principal to undertake, the solutions for problems common to all departments may be read to the staff as a whole and criticisms invited. The principal can frequently recommend ways of checking the solutions, or ways of arriving at more satisfactory solutions. At this point Procedure A [1] may be used to advantage by the few teachers who "have no difficulties." Procedure B may be followed by other teachers as a means of obtaining additional solutions. It can be safely predicted that most of the solutions will be too general. If the principal does no more than urge that the details of each "solution" be so specified as to make their application entirely clear to him, he will accomplish much. The teachers' solutions should be illustrated in terms of the given subject matter wherever possible. Problems of class management should be solved in terms of the particular pupils concerned.

*h. Step 8.* Direct the work of each departmental group upon one major difficulty for that department. Such work may be somewhat extensive. When a given problem calls for certain information concerning the needs of the given pupils, the collection of such data may well become a major project. Work upon the strictly departmental problems may well run parallel with work upon the problems common to all departments, as described in Step 7.

*i. Step 9.* Whenever necessary for the morale of the staff as a whole, the departmental chairmen should report their findings to the entire staff for criticism. By selecting such reports in advance, the principal may stimulate the less active groups to accomplish more and better work.[2]

The effect of the criticism and discussion should be a definite

[1] See pages 43 ff.

[2] To this end it is, of course, essential that standard texts on the teaching of the special subjects and standard texts on general method be accessible to all teachers. A fund of from fifteen to twenty-five dollars will often purchase such of the books needed as cannot be borrowed or obtained without expense.

plan for study and classroom experiment by each department throughout the year. The size of the problems selected and the extent of the study will naturally depend on the amount of time available.

3. **Procedure C illustrated.** The foregoing procedure has two purposes: one, to collect the significant problems confronting the different departments; the other, to analyze the problems for such further study as the teachers have time to undertake. Both purposes are combined in the single objective — to improve classroom instruction.

The steps in the procedure are perhaps sufficiently clear as stated, with the exception of steps 5, 6, 7, 8, and 9. These steps will be illustrated by materials obtained from teachers of the Clairton (Pa.) high school where the procedure was applied with certain modifications. Since the material contained in Part II of the present volume was not then available, the materials shown below were worked out with no reference to Procedures A and B.

*a. Step 5.* This step calls for the rating of a composite list of classroom difficulties. Fifty-nine difficulties in all were collected from thirty-nine teachers representing nine departments of grades seven to twelve. The fifty-nine difficulties were first ranked for importance, then ranked again on the basis of frequency. Since the time for discussion was limited, the difficulties which were ranked below the median in each list were arbitrarily omitted from the general discussion. Some of the difficulties thus omitted were studied later by individual departments. Table II shows the ranking of the difficulties retained.

The purpose of the table is to make clear to the teachers the fact that certain problems are common problems. If a similar table based on the rankings of any group of teachers is placed on the board and discussed, the teachers are more likely to be convinced that the problems are worth coöperative effort. The

following problems are those referred to by the numbers in the left columns of the table.[1]

## TABLE II

THE RANKS OF TWENTY-SIX DIFFICULTIES IN FREQUENCY AND IN IMPORTANCE AS DETERMINED BY THE HIGH-SCHOOL STAFF AS A WHOLE [2]

| Number of Difficulty | Rank | | Number of Difficulty | Rank | |
|---|---|---|---|---|---|
| | Frequency | Importance | | Frequency | Importance |
| 2 | 3 | 8 | 29 | 27 | 16 |
| 5 | 6 | 9 | 30 | 20 | 15 |
| 7 | 24 | 24 | 32 | 4 | 1 |
| 12 | 7 | 25 | 33 | 14 | 6 |
| 13 | 8 | 28 | 34 | 15 | 18 |
| 15 | 5 | 14 | 36 | 9 | 21 |
| 19 | 13 | 10 | 37 | 11 | 13 |
| 20 | 25 | 20 | 38 | 28 | 23 |
| 21 | 22 | 16 | 39 | 16 | 7 |
| 22 | 26 | 2 | 40 | 23 | 26 |
| 23 | 10 | 11 | 42 | 29 | 30 |
| 24 | 18 | 12 | 44 | 12 | 4 |
| 27 | 19 | 5 | 45 | 17 | 19 |

2. How to motivate correct speech. (E)

5. How to make a special topic report by an individual pupil of greater benefit to the entire class. (G)

7. How to make the poor student recognize defects in his work. (H)

12. How to get pupils to complete assignments. (E) (M)

13. How to arouse the interest of pupils who expect to leave school at the age of sixteen. (G) (H) (M)

15. How to encourage the slow pupil to participate in class discussion. (H)

[1] The letters in parentheses refer to the departments by which the difficulties were reported: C — commercial, E — English, F — French, G — geography, H — history and social studies, L — Latin, M — mathematics, P — practical arts, S — natural science.

[2] The difficulties which were ranked below the median for either frequency or importance are omitted from this table.

19. How to teach ideals, such as courtesy. (P)

20. How to arouse lazy and indifferent pupils to an interest in their work. (P)

21. How to arouse the pupil's sense of individual responsibility. (G)

22. How to teach pupils the value of concentration. (C)

23. How to teach girls higher ideals and standards in home-making. (P)

24. How to emphasize the need for accuracy. (P)

27. How to deal with pupils who can memorize but who are unable to apply general principles to life-problems. (C) (G) (H) (L) (P).

29. How to make pupils conscious of individual difficulties in learning the grammar of a foreign language. (F)

30. How to develop the ability to pick out the main points for outline work. (H)

32. How to counteract dependence upon the teacher for help and thought. (E) (F) (G) (H) (L) (M)

33. How to get the pupil to think about what he is doing and to use the more efficient methods. (P)

34. How to find varied and interesting methods of presenting uniform types of work. (E)

36. How to deal with pupils who are slow in taking dictation. (E)

37. How to make socialized recitations open-minded discussions. (G)

38. To what extent should the teacher direct socialized recitations? (E)

39. How to deal with the over-enthusiastic class so that the pupil reciting may be given a chance. (H)

40. How to counteract chorus answers. (H)

42. How to keep the interest of the brighter pupils during repeated explanation for the slower pupils. (S)

44. How to break up a teacher-pupil recitation and get the pupil to recite for the benefit of the class. (H)

45. How to plan a successful check system for tools. (P)

*b. Step 6.* The first problem selected for consideration by all groups should be one which stands high both in frequency and importance. The staff as a whole gave some attention to diffi-

culty No. 32, "How to counteract dependence upon the teacher for help and thought." This difficulty is shown by the table to rank first in the order of importance and fourth in the order of frequency among the fifty-nine difficulties reported. It also has the distinction of having been originally reported by six of the nine departmental groups. The following procedures are typical of the specific procedures selected for this difficulty.

1. Present material with emphasis on its larger and more general meanings. Make some attempt to illustrate the application of such material to life-situations which the pupils consider both interesting and important.

2. Show the pupils what you expect them to do with this material by working out with them a typical assignment — for example, summarize a passage in English literature, write a specimen composition, solve a problem in mathematics, or analyze a substance or process in science.

3. Give the class another such assignment to be worked out under your supervision. Write rules of procedure or directions for study on the board.

4. Prepare further exercises to fit these rules of study which the pupils can work out independently, step by step.

5. Require pupils to keep some sort of record of points found difficult so that common difficulties may be explained to the class.

*c. Step 7.* The inadequacy of the procedures listed above is obvious. The conspicuous weakness is their extreme generality. This fault is due to the scope of the difficulty selected. It was agreed that in order to obtain more useful results the difficulty chosen should be more specific. It was further decided that procedures should be illustrated in terms of the particular subject matter involved. For greater clearness the foregoing procedures were applied to different subjects in turn. Each departmental group then selected its own difficulties for analysis and solution.

*d. Step 8.* The following difficulties were proposed by the respective groups as peculiar to the work of each department.

### Commercial

How to teach the pupil to coördinate his thought and touch in typewriting.

How to teach the classification of accounts, assets and losses, liabilities and gains, and entries.

### English

How to counteract the tendency of pupils to read cheap fiction and over-imaginative stories.

How to teach pupils with meager vocabularies and background to read English classics with interest and comprehension.

How to secure successful motivation in composition work for pupils of inferior ability.

### French

How to build up an adequate French vocabulary.

How to teach the distinction between infinitives requiring à and de.

### Geography

How to make it clear that difference in latitude is not alone responsible for climatic differences.

How to arouse in pupils a sense of individual responsibility for explanations given in class.

### History

How to teach pupils to pick out the main points in outline work.

How to train pupils to recognize events in proper relationships.

How to secure the interest of the Freshman who is marking time until the arrival of the birthday which permits him to discontinue school.

### Latin

How to teach English-to-Latin translation with emphasis on meanings.

### Mathematics

How to get results from pupils who are marking time until they are sixteen years old, when they may leave school.

How to make each pupil prepare night-work assignments without keeping him after school.

How to make pupils less dependent on the teacher.

PRACTICAL ARTS

How to avoid too much individual instruction in a sewing class when the members of the class are at different stages of work.

How to make the pupils feel responsibility for the tools and to plan a successful check system for them.

SCIENCE

How to get Freshmen to see the problem that they are to solve.

*e. Step 9.* The nature of the solutions which each group should propose may be illustrated by the following abstract of a report made by the chairman of the English group.

The discussions of the group were principally concerned with the following problems: developing independence in the pupils, eliminating crudities in the pupils' daily speech and writing, stimulating the reading of worthwhile books, and developing adequate and proper motives in the writing of compositions. The last of these was regarded by the group as the most serious problem. It was believed that the so-called "laboratory method" might contain the solution. Several members of the department experimented with the method to the extent of allowing pupils to choose topics from a carefully prepared list and requiring all written composition work to be done in class under the teacher's supervision. The following difficulties were reported: (1) The "slow" (less capable) pupils were the first to finish, and these were disposed to "start something" while waiting for the period to end; (2) there was not nearly sufficient time for the conscientious pupils to finish, and (3) the teachers were unable to get around the class to give all the guidance requested.

The following remedies for this difficulty were proposed.

(1) Have a specific aim for each composition period and work toward that one end only. Let the class concentrate on this one point — for example, paragraph structure — even though other important principles are neglected. This should prevent confusion resulting from the attempt to teach the whole subject to all the pupils at once.

(2) Take more care in the selection of topics and their assignment to individual pupils. For example, suppose there has been an accident in the local

steel mills. Discuss it in class. Find out the facts that may not have been correctly reported in the local press, such as the causes, results, dramatic details, and possible means of prevention. One of the pupils who finds writing difficult and whose father works in the mill should be called upon to write up the accident.

(3) Ask the class as a whole to give suggestions to individual pupils. These suggestions should cover both content and method. Allow time for this in the writing period.

(4) Whenever possible, stress the writing of real letters in place of formal themes.

(5) Give the class some model to follow that shows clearly what is desired in the application of the particular rule or principle on which the class is working.

(6) When a "slow" pupil finishes early and says that there is nothing more to be added, ask one of the "conscientious" pupils to help him discover important omissions or mistakes in what he has written. Exercise care in selecting pupils who work together in this way.

(7) "Conscientious" pupils who have not finished should be allowed to continue at the next meeting of the class.

(8) The teacher's difficulty in getting around the class to give instruction may be met in part by confining instruction to the single principle that the exercise is designed to teach. No time should be given to the explanation of other difficulties in class. Whenever the teacher discovers that several pupils are making the same mistake in their attempt to apply the principle assigned for practice, this mistake should be explained to the class as a whole until the principle has been made entirely clear.

For further study of this difficulty the following plan was proposed:

(1) Examine a variety of texts on special methods of teaching English and texts on English composition for the purpose of collecting a large and appropriate list of theme topics which are suggestive. Let each teacher record such attractive topics as may be suggested in class by the type of pupil with whom this study is concerned. (2) Submit this list to the pupils having difficulty in composition work and ask each to check the topics he finds most appealing. Then add other similar topics. (3) Collect from the teachers

of other departments a list of the pupils' deficiencies in written work and a list of the topics that the pupils find interesting in these departments. Determine the most frequent errors and gradually reconstruct the course on this basis. (4) Discuss in weekly or bi-weekly departmental conferences the specific methods that various teachers use in directing class study of the deficiencies selected for the given course. (5) Whenever a method is reported which the group considers promising, each teacher should experiment with it for the purpose of finding specific means of improving its application or possible objections to it. (6) The conclusions reached by the group in its periodic conferences should be recorded by a secretary for possible publication in a departmental handbook.

This report produced no effect on the staff as a whole other than to impress them favorably. The report, however, is open to criticism on three counts at least, namely:

1. No provision is made for the preparation of an adequate bibliography. This might well be the major task of the group for the first few weeks. Three sets of references would be useful: those including lists of theme topics, those containing lists of errors in written English made by pupils of the junior high school and the senior high school, and those containing useful suggestions for the motivation of theme work.

2. Insufficient provision is made for the collection of pupils' errors from other departments. An easy way of securing these would be to request the teachers of other departments to make a list of the principles most frequently violated and to turn over to the English department the papers which contain typical errors.

3. Procedures for the teachers' experiments with promising methods should be worked out by the group in advance. While it is unwise to expect any more conclusive evidence than the teacher's belief that the given method is effective, the details of the procedure should be clearly specified before the procedure is applied. Otherwise the try-out will be less useful to other teachers.

Criticisms of such plans for further study should be well considered. It is therefore necessary for the principal to study carefully the plans of each departmental group. It will usually be necessary to point out to the different groups the details in the procedure which require more definite statement. It is also necessary that the amount of work planned for the year be adjusted to the interests and the executive abilities of the respective group chairmen, since no study plans are likely to materialize except through the chairmen's initiative.

4. **Summary.** It is doubtless too much to expect of teachers that they give time to purely formal studies of professional literature. It is desirable, however, that teachers in need of help be directed to sources from which they can receive help most directly. Furthermore, it is necessary that the principal organize some method of improving classroom teaching without arousing antagonism. The chapter recommends three procedures to meet this need. Procedure A is designed to help teachers identify classroom problems in terms of pupils' responses. Procedure B is intended to help teachers find solutions for the problems defined. Procedure C represents a somewhat ideal method whereby the principal may direct teachers in their experimental study of difficult problems. Taken literally, each of the three procedures will impress many teachers as being more trouble than it is worth. Other teachers and supervisors who adapt the procedures to their needs will find them useful. The value of the procedures consists largely in challenging teachers and supervisors to define their own technique for the solution of problems. Such techniques can only be developed to the point of real usefulness by systematic and recorded experiments within the given school.

# CHAPTER III

## PROBLEMS IN THE PRESENTATION OF SUBJECT MATTER

### A. Summary of Factors Involved

The purpose of the chapter is to discuss typical classroom problems in the selection, emphasis, and presentation of subject matter. The discussion is based upon selected case problems that serve to illustrate certain type-difficulties selected from Section I, Part II. Yet since each case problem represents an actual classroom situation, the problem involves other type-difficulties than the one it serves best to illustrate.

1. **The plan of discussion.** The discussion of each case problem is organized under four headings. The case problems are first presented as described by the teachers reporting them.[1] Each problem is then followed by a list of the principles selected by the teacher from Part II, as tentative solutions for the problem. The principles are next applied to the given situation in the form of procedures for the teacher's actual use. The tentative solutions are then briefly criticized, — the purpose of the criticism being to point out wherein the solutions are inadequate and to suggest possible improvements. The chapter concludes with the outline of a procedure for problem solution designed for application to problems in the selection and organization of subject matter for any typical course.

[1] The descriptions, as submitted by teachers, have been edited to make them more nearly uniform in size and to change the subjects from the first to the third person.

2. **The relation of subject matter and method.** Problems in selecting subject matter are seldom distinct from problems in teaching method and class management. The first indication that subject matter has been unwisely selected is usually the teacher's difficulty in teaching it effectively. When a competent teacher is unable to find points of contact between the subject matter and the pupils' experience, the probabilities are that the subject matter needs modification. Yet, difficulties in securing satisfactory response from a class are also frequently due to the use of improper methods of presentation. What to teach and how to teach it are thus problems inseparably related. A glance at the cross-reference table on page 256 will show that problems involving subject matter are more closely combined with problems in directing pupils' learning than with problems of the other five groups. Every classroom situation involves both subject matter and method.

On account of this interdependence of subject matter and method it is important first to give attention to subject matter. There are two reasons why subject matter should be selected before problems of method are considered. The most obvious reason is that subject matter affords a basis upon which different methods of teaching may be evaluated. To select methods of teaching without knowing specifically what is to be taught is like selecting tools without reference to the work to be done. No one method of directing pupils' learning is any better or any worse than any other method until one knows for what purpose it is used. The project may be efficient when used to teach pupils to solve their own problems in science. It may be highly inefficient when used to teach multiplication tables or syntax in foreign language.

A second reason why problems of subject matter should receive first attention is because subject matter is more easily defined in

terms of social objectives. The objectives of teaching method are largely determined by the subject matter. Problems involving selection of subject matter should be studied in terms of life situations that pupils are meeting or will meet. Problems involving methods of teaching should be studied on the assumption that the subject matter has been wisely selected and in terms of pupils' difficulties in learning it. Confusion is inevitable unless this distinction is made. To select subject matter which lends itself to a pre-determined method or to select it upon any other basis than its value in life situations, is to form a vicious circle that precludes efficient teaching.

3. **Curriculum construction is a task for the specialist.** The selection of subject matter as a teaching problem should not be confused with curriculum construction. Curriculum construction is a highly complicated enterprise which only the specialist is qualified to undertake. The teacher's selection of subject matter is a far simpler process and consists in adapting to the needs of a given class a course already constructed. It is true in general that the more the teacher knows about the techniques of curriculum construction, the more wisely he can adapt a given course to the pupils' needs. Many teachers also are obliged to produce courses on their own initiative, but this responsibility is usually met by simply taking over a course already constructed and tried out by another school. To construct even a single course scientifically requires time and special training that only a very few teachers possess. It is not the teacher's legitimate responsibility. It is better to borrow a good course than to make one hastily.

In view of this fact, the present discussion of subject-matter selection is confined to problems requiring readjustments within the existing course of study. The course of study may consist in a textbook, a list of topics prepared by the superintendent or

teachers' committee, or a more detailed syllabus already organized in the form of teachable units. Whatever the form may be, certain adaptations will be required in presenting the material effectively to a particular class. Such adaptations the teacher should make in the light of specific information concerning the interests, abilities, and needs of the given pupils.

4. **Four types of problem.** Any course of study needs usually to be adapted in four ways: namely, *a.* by selecting supplementary material that will serve to explain more clearly the basic material of the course; *b.* by organizing the material into more closely coherent units; *c.* by selecting items requiring special emphasis for certain members of the class; and *d.* by selecting items that are specially suited to the teaching of appreciations and desirable attitudes as distinct from other outcomes of the course. The four ways of adapting subject matter are involved, respectively, in the last four of the five case problems discussed. They are also emphasized in Procedure D, which applies to the solution of all common difficulties arising from subject matter as such.

## B. The Teacher's Command of Subject Matter

The first of the problems presented is chosen to illustrate the use of Part II as a source of tentative solutions. While the type-difficulty involved is relatively infrequent, it is none the less highly significant for the teachers who meet it. In the following analysis, the principles selected by the teacher from Part II are listed separately from the solutions proposed by the teacher for direct application to the problem. In the analysis of other case problems, the principles selected from Part II are simply indicated by symbols.

1. **Case problem No. 1.**[1] *A teacher of general science is asked by the superintendent to teach a class in elementary botany. The*

[1] Reported by a teacher of six years' experience.

*request is made two weeks before the opening of school. The teacher has taken no course in botany since high school and is confronted by the major difficulties of mastering the subject matter, selecting materials to be presented, and planning methods of presentation.* (*Type-difficulty I. A.*)

2. **Principles selected from Part II that apply to the problem.** *a.* Acquire command of the subject matter by taking a course in residence or extension classes at local institutions; for example, by enrolling in correspondence courses, by attending summer-school classes, by independent study of basic texts, by searching for interesting botanical material as found in books and magazines, and by systematic discussion of such reading with well-informed acquaintances. (Part II, I. A. 1.)

*b.* By clipping appropriate items from periodical reading, by noting effective illustrations suggested by daily preparation for teaching, and by asking other teachers to suggest illustrations that they themselves use to advantage in presenting topics discussed in the text. (Part II, I. A. 5.)

*c.* By conversation with persons who make constant use of the given subject in their daily work (such as horticulturists, landscape gardeners, tree surgeons, lumbermen, florists), as a means of collecting genuine problems to which botanical principles may be applied. (Part II, I. A. 6.)

*d.* Determine the materials most useful to the given class by selecting them from other courses of study, as follows (Part II, I. C. 1):

(1) Divide the given course into coherent units, if not already so divided, — each unit to cover from two to three weeks of school work.

(2) List the useful applications that most pupils are likely to make of each unit in ordinary life situations.

(3) Adapt the subject matter contained in each unit so that it

will bear as directly as possible upon the life applications listed, *e.g.*, teach the unit on growth of the leaf in relation to the dietary importance of green vegetables.

*e.* Adapt the material to the abilities of the class by finding out what the class already understands about the topic. This may be determined by a pre-test. Pupils may be told to write what they know of the topic before it has been presented. Or they may be asked to check items which are familiar from a list of facts or questions relating to each major topic. (Part II, I. C. 5.)

*f.* Teach principles by means of familiar illustrations. Many illustrations with which pupils are familiar should be collected for each principle taught. The principle should then be presented to the class in terms of the illustrations collected. (Part II, I. C. 10.)

*g.* Pupils' study out of class should be largely voluntary until the pupils have learned how to study independently of the teacher's direction. Pupils may, however, look for examples of plant life, grow plants at home, and carry on other outside projects related to the class work. (Part II, I. D. 3.)

*h.* Develop interest in the work by selecting situations within the pupils' experience that present problems. Explain clearly by what steps the problem is to be solved, and how the pupil may find out what he needs to know to solve it. Present directions to guide the individual pupil in his study during the class period, so that the teacher may be free to give assistance to pupils who need it, whether singly or in groups. (Part II, I. D. 7.)

*i.* Select appropriate readings for study in the classroom. The readings selected should appeal to the class as worth reading in themselves and should supply information that increases understanding of the unit. Insofar as is possible, collateral reading should be done voluntarily out of class. The same refer-

ences, however, may be consulted during the class period in connection with study of appropriate units. (Part II, I. E. 2.)

*j*. Help pupils to develop principles themselves from specific illustrations. This may be done by listing many illustrations or examples of the same principle. The class may then state what is common to the various examples and so arrive at a rough definition of the principles involved. (Part II, I. G. 4.)

*k*. Popular and generalized treatments of a topic that the textbook treats in confusing detail may be obtained most readily from magazine articles, popular lectures, and some of the more recent encyclopedias for young readers. Illustrative objects for the course in botany may be obtained by arrangement with local or state museums, or by making original collections with the pupils' assistance. (Part II, I. H. 2.)

*l*. To make each pupil in the class coöperate, try to locate common interests in nature study that relate to each unit of the course. Present the work in terms of that interest. Show the value of the work as a means of understanding various botanical processes that are interesting in themselves and that can be applied to the solution of practical problems. (Part II, IV. A. 1.)

3. **Solutions proposed by the teacher reporting the problem.** *a. The following solutions were proposed as means by which the teacher might master the subject:*

(1) Secure a standard text and compare it with the text studied when a pupil in high school and with other texts available.

(2) Obtain the advice of experienced teachers concerning the relative importance of the chapters in the book, the best manner of grouping the chapters into units of instruction, and tentative time allotments for each of the proposed units.

(3) Become familiar with the New York state course of study in botany.

(4) Secure other courses of study for possible addition of more interesting and useful material by writing to various superintendents of large city systems.

(5) Secure notebooks of former pupils to become acquainted with the work of former classes.

(6) Read popular books on various popular aspects of nature study; also articles in general magazines, such as *Harpers*, the *Atlantic Monthly*, *Geographical Magazine*. Select and classify according to teaching units the illustrations found.

(7) Read articles dealing with the teaching of botany in teachers' journals devoted to the teaching of natural science, *e.g.*, *General Science Quarterly*, *School Science and Mathematics*. Note useful devices for illustration and direction of study.

*b. The following were proposed as means of selecting supplementary materials:*

(1) Make a list of popular books where nature study is prominent, *e.g.*, writings of Gene Stratton Porter.

(2) Make an inventory of necessary laboratory equipment, using recommendations of the state course of study where possible, and lists of supplies found in texts on the teaching of science subjects.

(3) Make a collection of significant and interesting problems for class study from other teachers, textbooks, and study of pupils' interests in plant life.

(4) Mimeograph directions for the guidance of pupils in laboratory exercises for collection of leaves, seed charts, fruit posters, flower calendars, and the like.

(5) Arrange with the state museum, if possible, for the loan of traveling collections.

*c. The following were proposed as means of formulating methods of presentation:*

(1) Plan observation hikes for spring and fall months.

(2) Study plans for a botany club and plan tentative programs.

(3) Have a bulletin board made for pupil collections.

(4) Make a list of botanical problems which should interest beginning pupils. Use such problems to introduce the study of each new unit.

(5) Proceed with the solution of problems in teaching as they arise. The introductory work should consist largely in discussing familiar problems in the light of reading done in class. More specific methods of instruction and class management cannot safely be planned until specific problems are met. The foregoing selection of principles should apply.

4. **Criticism of solutions proposed.** The problem consists in producing a course in botany on short notice when the teacher's own knowledge of the subject matter is deficient. The problem arises before the teacher has actually met the class. Since the teacher has had six years of experience, there is no need to anticipate serious difficulties in method. In proposing solutions for the problem, the teacher therefore acted wisely in stopping short of specific teaching procedures. Such procedures cannot be selected intelligently until the pupils' difficulties in learning are known.

The problem is obviously one encountered more frequently by beginning teachers who are asked to "fill in." The procedures suggested above are equally appropriate for beginning teachers. Beginning teachers, however, might do well to anticipate other difficulties found in sections Three, Four, and Six of Part II. Such type-difficulties might be anticipated, for example, as how to organize the class period so as to permit individual work by each pupil, how to conduct oral reports efficiently, how to provide materials for class work (Section III); how to hold attention, how to prevent late assignments, how to check class

disorder (Section IV); how to develop self-confidence, how to show friendliness, and how to share interest in the subject (Section VI).

The problem is necessarily general. Because of its generality it serves well to illustrate the importance of analysis. By considering each of the sixty-nine type-difficulties in turn, the teacher is better able to anticipate the troublesome situations that may be avoided by planning in advance. The same situations have seldom the same relative difficulty for different teachers.

## C. Adapting Subject Matter to the Needs of a Given Class

1. **Case problem No. 2.**[1] *A high school in the state of New York requires Pope's Iliad to be taught for a period of ten weeks as a unit in advanced tenth-grade English literature. The class consists of thirty-six pupils, including eleven repeating the course. None of the pupils are preparing for college. All pupils, excepting the repeaters, are consequently ignorant of Homeric traditions in particular and of classical lore in general. Only two or three pupils, except the repeaters, had ever read any eighteenth century poetry. While the teacher is free to introduce supplementary material by way of simplifying and interpreting the text, the pupils are expected to have mastered the factual content by the end of the ten-weeks' period. The major problem thus consists in selecting supplementary material to explain the text to the pupils of this particular class.* (*Type-difficulty I. C.*)

2. **Principles selected from Part II that apply to the problem.** I. B (3, 4, 5), C (1, 2, 3, 4, 5, 11), D (4, 5, 6), F (1, 4), H (2, 4), K (1, 4); II. F (4, 5), H (3, 4), I (3), J (1, 2); IV. A (3, 4), C (2, 5, 6, 7).

[1] Reported by a teacher of ten years' experience.

3. **Solutions proposed by the teacher reporting the problem.** *a. Obtain useful information concerning members of the class as follows:*

(1) Interview each of the eleven repeaters. Discuss tastes in reading and other hobbies. Write down what each pupil says and note especially any indications of interest that might help to remove indifference toward the course.

(2) Give a group test of general intelligence for what it may show as to the abilities of the indifferent pupils.

(3) Test all pupils' familiarity with the better known characters of Greek mythology by presenting a list of such characters to be identified. Study the results to determine which pupils find the setting of the story entirely strange.

*b. Collect life situations familiar to the class that illustrate the situations described in the story, e.g.,*

(1) Note systematically the passages in the text that are rich in human significance and find modern parallels, stories, and school incidents to illustrate each; *e.g.*, Achilles sulking like a certain professional baseball player.

(2) Plan a notebook procedure whereby pupils collect similar illustrations.

(3) Collect appropriate cartoons, pictures, and references to mythology to post on the bulletin board.

*c. Remove difficulties of Pope's poetical form; e.g.,*

(1) Analyze the iambic pentameter to show that it differs only slightly from prose and to give confidence in its readability. Make a game of transposing the sentence structure to see who can find the subject.

(2) Paraphrase some of the more thrilling passages into the prose form to show the greater emotional tone of the poetry.

(3) Read other and simpler poetry to remove the impression that " poetry doesn't make sense."

(4) Provide good prose translations, such as Lang's, and other collections of Homeric myths.

*d. Supply other incentives to an appreciation of the story; e.g.,*

(1) Encourage the abler pupils to publish verse in the school magazine.

(2) Emphasize the age of the story and the fact that every well-read person knows it. Introduce frequent modern references to it in essays, speeches, fiction, poetry, and advertisements.

(3) Stress the fairy-tale value of the story.

(4) Develop discussion of the ideals and conduct of gods and heroes — to what extent justified in primitive times, and at present? Organize formal debates as outgrowths of such discussions. Judiciously assign oral reports on topics carefully chosen to bring out the human interest of the story and its relation to modern standards of conduct.

(5) Read selections, as effectively as possible, both from the poem itself and from supplementary material, *e.g.*, John Erskine's *The Private Life of Helen of Troy.*

(6) Devote much class time to individual silent reading for the purpose of interpreting the story correctly as running narrative. Vary the individual work by the (perhaps voluntary) preparation of reports on the meaning of the story, the characteristics of different characters as inferred from their actions, significant Greek customs, and other useful topics proposed by the class.

4. **Criticism of solutions proposed.** The type-difficulty most closely related to the problem is " How to adapt prescribed subject matter to the needs of a given class." This type-difficulty

is perhaps the one most frequently met. Its importance is clearly due to the fact that the difficulty is so broad as to include most of the essentials of classroom teaching. For this reason, no single case problem can do more than suggest the implications.

The solutions proposed are less useful than they might have been had the essential procedures been developed in greater detail. Solution *b*, for example, is merely suggested. The supplementary materials needed to explain the text should have been specifically listed. Until the actual readings, pictures, and the like, are actually collected, the teacher is not safe in assuming that effective materials can be found. Solution *c* suggests the teacher's need for greater familiarity with the literature on methods of teaching poetry. The devices useful in presenting poetry in junior high-school grades are by no means represented by the four procedures stated. Solution *d* contains several promising suggestions, notably the treatment of modern references, silent reading of " collateral " references in class, and oral reports on significant topics of the text for which modern parallels or applications may be found. Each of these also should be carried to greater detail.

Of the four procedures useful in adapting subject matter to the need of the class, only two are specifically mentioned. The two others consist in organizing the ten-weeks' work into coherent sub-units and in emphasizing subject matter needed by part of the class. Both of these deserve particular attention.

The adequacy of the procedures proposed is open to question at several points. Some of the difficulties, indicated by the principles selected from Part II are not met by the solutions at all, notably vocabulary study, the means of selecting and assigning collateral reading, and interrelating the work of the course. The essential procedures might well be improved if such other difficulties had been taken into account. The problem as a whole

calls for teaching procedures that may compensate for inappropriate subject matter. Considering this fact the need for defining procedures in greater detail is evident.

## D. Unit Construction

1. **Case problem No. 3.**[1] *The course in American history in the eighth grade of a junior-senior high school had formerly been taught on the strictly chronological basis of conventional textbooks. It was decided to reorganize the course into a series of units, each of which might present a single historical principle or tendency in its relation to contemporary social conditions. The sequence of the units was to be chronological only insofar as the narrative form of presentation made them easier for pupils to follow. No American history text for junior high-school grades was found to contain the kind of subject matter desired for the various units. It was therefore necessary to select appropriate text materials, to select materials not found in texts, to organize the materials into coherent units of instruction, and to devise effective ways of presenting the materials so organized. It also became necessary to teach pupils to select appropriate items from the materials available.* (*Type-difficulty I. E.*)

2. **Principles selected from Part II that apply to the problem.** I. C (1, 4, 5, 10), D (5, 7), E (2, 5, 6), F (4), G (4), H (2, 4); II. A (4), C (2, 4, 5), E (5), H (3), J (1, 2, 4, 5), K (3, 8, 9), M (2, 3, 4), and P (2, 8); III. E (1, 2, 3, 5).

3. **Solutions proposed by the teacher reporting the problem.**[2] Three sub-problems are mentioned in the description of the problem; namely, *a.* to select the sort of materials desired, *b.* to define coherent units, and *c.* to teach pupils to

[1] Reported by a teacher of three years' experience.

[2] A report of the course herein described appears in the *School Review*, Volume XXV (1927), by H. C. Hill and R. C. Weaver.

select ideas pertaining to the unit. Solutions for the first two sub-problems are shown in the following outline.

*a. Text materials selected:*

(1) Why white people first came to America.

Gordy, *History of the United States*, 5–6, 8–11, 71, 54–56, 52, 53.
West and West, *Our Country*, 27–34, 103–104, 70–71, 108–109.
Burnham, *The Making of Our Country*, 5, 6–8, 16, 30, 24–26, 33, 34.
Bourne and Benton, *History of the United States*, 2–5, 62–63, 34–37, 80–81.
Burton, *Builders of Our Nation*, 14–22, 29–45, 91–93.
Halsey, *Great Epochs in American History*, I, 23–27, 168–169.
Halsey, *op. cit.*, II, 204–208.
Nida, *Following Columbus*, 18–22, 24, 100–106, 108–182, 234.
Gordy, *Stories of Early American History*, 1–14, 96–100.
Faris, *Where Our History Was Made* (Book One) 94–106.
Eggleston, *Life in the Eighteenth Century*, 32–51.

(2) Kinds of people who came.

Gordy, *History of the United States*, 9, 41–45, 59, 62–64, 52, 82, 77–78, 80, 74–75.
West and West, *Our Country*, 52, 55, 67, 56, 77, 79–80, 105–107, 62, 104.
Burnham, *The Making of Our Country*, 20–22, 76, 337, 547–548, 26–27, 62–66, 83, 85, 33, 63, 36, 37.
Bourne and Benton, *History of the United States*, 23, 26–28, 32, 67–68, 71, 44, 46, 48, 53, 78–80, 82, 66, 73–76, 63.
Burton, *Builders of Our Nation*, 80–86, 129–140.
McFee, *American Heroes from History*, 1–20.
Faris, *Where Our History Was Made* (Book One), 28–37.
Eggleston, *Life in the Eighteenth Century*, 1–31.
Eggleston, *Our First Century*, 37–40, 61–81, 96–98, 101–105, 115–138.
Nida, *Following Columbus*, 138–140, 158–161, 194, 196, 204–218, 225–236.

(3) Migrations from Europe since the American Revolution.

Gordy, *History of the United States*, 305, 385, 387, 386, 388, 394–395, 537.
West and West, *Our Country*, 422, 424, 426, 425, 427.
Burnham, *The Making of Our Country*, 384, 544–547, 549–551.
Bourne and Benton, *History of the United States*, 271, 330–331, 386, 425–426, 458–459.

Hill, *Community Life and Civic Problems*, 145–148, 153, 170, 150–158.
Husband, *Americans by Adoption*.
Ross, *The Old World in the New*, Ch. 1–9.
Orth, *Our Foreigners*.
Holt, *The Life Stories of Distinguished Americans*, Ch. 1–8, 14–16.
Beard, *Our Foreign-Born Citizens*, 58–72, 202–207, 235–252.

(4) Our present population.

Atkinson, *Story of Chicago and National Development*, 21–25, 28, 32–33, 35, 42, 44–45, 49–54, 78.
Robinson and Moore, *History of Illinois*, 58–59, 66, 74–75, 77, 101, 106, 108, 121, 123, 127, 160, 215.
Hall, *The Story of Chicago*, 17–99, 105–110, 152–154.
*Statistical Abstract of the United States, 1924*, 1–60, 73–84.
*The World Almanac and Book of Facts for 1926*, 433 461, 304–309, 312, 314, 315–317.
*The World Almanac and Book of Facts for 1925*, 385–411, 263, 257, 200–201.
*The Daily News Almanac and Year Book, 1926*, 216–217, 253–258, 242, 265–266, 271–272, 247–249, 274–275, 243, 245, 894–905, 914.

### *b. Sample unit defined.*

#### How America Was Peopled

*Essentials*

1. Why white people first came to America: commerce — Marco Polo, Christopher Columbus, Henry Hudson; religion — the Pilgrims; oppression — James Oglethorpe and Georgia.

2. Kinds of people who came: Columbus and his crew; the settlers at Jamestown; the bringing of the Negroes; the colonists of Massachusetts; the different nationalities in South Carolina, Delaware, Pennsylvania, New York; the chief nationality in the colonies.

3. Migrations from Europe since the American Revolution: incomers from northwestern Europe to 1880 — Carl Schurz, Edward Bok; incomers from southeastern Europe since 1880 — Mary Antin, Michael Pupin, Edward Steiner.

4. Our present population: this class; this high school; this city ward; Chicago; Illinois; United States.

*Additional Topics*

The Coming of the Norsemen.
Influence of the Crusades on American Exploration.
The Quakers in Early Pennsylvania.
Services of Jacob Riis to America.
Early Settlers in Chicago.
Early Settlers in Illinois.

*c. Solutions for the third sub-problem.* — "To select and present supplementary materials not found in history texts":

(1) Select the best material available in source books, Poole's *Index to Periodical Literature*, historical fiction, historical exhibits, and bibliographies for the given period. Consult librarians and professors of history for additions to bibliography.

(2) Refer certain pupils to pictures, graphs, and charts, also to selected government documents and official pamphlets.

(3) Make mimeograph notes for distribution on the topics not adequately covered by the texts — *e.g.*, "Kinds of people who came." The sheets should be discussed and supplemented when presented to the class.

(4) Bring in outside authorities (*e.g.*, other teachers and laymen interested in particular question) to speak on the unit, when such authorities can be found who are able to talk the pupils' language.

(5) Seek to improve methods of presentation already employed, for example, by selecting the more capable pupils to report on phases of the unit discussed in lectures on the near-by college campus, providing historical stories and projects of former pupils for examination during the class period, requiring all pupils to organize material on the unit from a wide variety of sources, testing pupils' scope of information as well as their memory of facts, teaching appreciations through vivid anecdotes either told or read by the teacher, and by presenting guide-sheets that bring out important implications in reading. Such implications should

be related to the major problem of the unit and to illustrative modern social conditions by working individually with pupils who need special direction in selecting relevant material from the sources indicated.

*d. The following solutions were proposed for the fourth sub-problem,* " To teach pupils to select ideas pertaining to the unit " :

(1) Work out with the class as a whole a list of criteria for statements that are pertinent to each unit, — *i.e.*, a list of topics and modern applications upon which any material must bear in order to contribute to the given unit.

(2) Submit a list of questions bearing upon the unit and have pupils write more detailed questions related to each, rather than writing answers to the questions. Such an exercise should give training in finding further implications.

(3) Give systematic training in simple outlining, by requiring proper subordination of details to main issues in all reports, whether oral or written ; by submitting an unorganized list of topics to be made into logical outlines, and by directing criticism of other pupils' reports to the end of discarding irrelevant material and organizing the relevant material effectively.

(4) Provide for independent evaluation of material in all assignments. The evaluation may consist either in selecting the more significant ideas from the historical material or in finding contemporary issues to which the material applies.

(5) Teach significant principles inductively by listing several topics or problems that involve the same principle. Have each pupil state the common elements found in the topics listed. Place all such elements on the board. Then let the class define the common principle.

(6) In all testing give as much emphasis to the selection and evaluation of material as to the memorizing of material. A com

bination of matching, multiple choice, and rank order test forms may be used to emphasize this ability.

4. **Criticism of solutions proposed.** The necessity of listing the foregoing solutions briefly has caused the omission of many procedures that doubtless are either actually in use or clearly in the teacher's mind. This objection naturally applies to all the solutions proposed in this volume. Considering the scope of the problem, the solutions here proposed are well selected, even though the statements are fragmentary.

The solutions deserve criticism at two important points: first, with regard to the method of defining the units; and second, with regard to the use of written exercises. As suggested in type-difficulties I. E (2, 5, 6) and II. J (1, 2, 4, 5), the construction of units is usually handled more efficiently when the same material is organized by several competent teachers independently. The essential topics may be listed in a column on one side of the page with blank vertical columns in parallel. Each teacher may then write the proposed unit titles at the top of the blank columns and check the appropriate topics under each title. With a number of such unit titles and the material related to each before him, the teacher concerned can usually arrive at more satisfactory units than when he attempts to define and construct the units alone. Frequent and detailed discussion of desirable subject matter by the teachers of the department is essential in the definition of teaching units.

The use of written exercises, as discussed in type-difficulty I. H (2, 4) and III. E (1, 2, 3, 5), might be developed to better advantage. Pupils seldom receive full benefit from historical readings and class discussion when their activities are confined to the preparation of reports. By means of problem exercises the teacher can confront each pupil with a specific situation that requires thinking and still allow him sufficient time to think.

which is seldom possible in general class discussion. Such exercises may be attacked by each pupil independently during the class period. The teacher is thus able to locate the pupils' individual difficulties. Significant points can be cleared up for the class as a whole as the difficulties arise. The exercise procedure is a useful means of directing the attention of all pupils to important and specific issues that some pupils otherwise miss.[1]

E. Emphasizing Material Needed by Part of the Class

1. **Case problem No. 4.**[2] *A unit on directed numbers is to be presented to a ninth-grade class in algebra. The class contains thirty-eight pupils of whom two thirds have normal ability, or better, and one third are unusually slow. The slow group can grasp only very simple explanations. The class as a whole must be so taught that the slow group will be able to learn without retarding the others. Hence, material needed by the slow group must be emphasized without wasting the time or effort of the other pupils. The wide difference in the abilities of the two groups makes it seldom possible for both groups to benefit by the same explanation. (Type-difficulty I. I.)*

2. **Principles selected from Part II that apply to the problem.** I. C (2, 3, 4, 5, 6, 9, 10, 11, 13), D (4, 6, 7), E (3, 5), G (2, 4), I (1, 2, 4); II. G (1, 2, 4), H (2, 3, 4, 5), K (1, 5, 8, 9); III. E (1, 2, 5), K (3); IV. A (1), C (6); V. E (1, 3, 4, 5, 7, 8, 10).

3. **Solutions proposed by the teacher reporting the problem.** *a. Obtain data to explain the slow pupils' deficiencies from school records, improvised tests on the unit, and standard tests; e.g.,* Douglass' *Diagnostic Tests*, Hotz's *First Year Algebra Scales*, *Illinois Standardized Algebra Tests*, Roger's *Test for Diagnos-*

[1] A more detailed discussion of problem exercises will be found in the following chapter, pp. 105 ff., and in Appendix E.

[2] Reported by a teacher of one year's experience.

*ing Mathematical Ability*, or Rugg-Clark's *Standardized Tests in First-Year Algebra. Original tests based on the unit are best.*

(1) Ask other teachers who have had the slow pupils in class to describe the methods found most effective in securing their response, and to supply any other useful information about them. Such information should be recorded.

(2) Obtain intelligence ratings of the slow pupils from office records, if possible. (3) Find out in what subjects, if any, they do good work. Get the history of their poor work in mathematics and try to find causes for their lack of interest and ability. Check such information by private interviews with the pupils concerned. Discover the incentives to which each best responds and locate his particular difficulties in beginning work upon the new unit. Observe his methods of study and give special exercises to correct wasteful methods.

*b. Present material in simplest form; e.g.,*

Represent directed numbers graphically by practical illustrations as in the thermometer scale, angles, segments, forces, business terms, and the number scale; and emphasize the basic idea of the unit in connection with each example presented.

*c. Present material in class with neither too much nor too little detail; e.g.,*

(1) Omit all material not considered essential to an understanding of operations with positive and negative numbers by the particular pupils concerned.

(2) Present only such explanations to the class as a whole as bears upon the common difficulties met in solving the problems assigned.

(3) Confine explanations of individual difficulties to the pupils concerned. Demonstrate the correct solution and explain it on the board, expecting only those pupils to pay attention who need the explanation. Others may proceed with their work.

*d. Present principles in terms of illustrations adapted to the different abilities represented in the class; e.g.,*

(1) Collect a wide variety of illustrations of the meaning of positive and negative numbers; *e.g.*, games, such as seesaw, tug of war, scores in 500; directions, such as rowing in a stream; latitude and longitude, right and left; nature, such as rise and fall of tides, distance above and below sea level, weight charts; business, such as debit and credit, stock quotations, assets and liabilities, deposits and withdrawals. Then experiment with different illustrations until a few can be selected that will convey the meaning most readily to the slow pupils.

(2) Classify the slow pupils into different groups so far as possible in order to facilitate different emphasis of material and of directions for study; for example, those who work best on their own responsibility, those who require occasional direction and definite rules of procedure, and those who do not grasp the material until the teacher has explained it and demonstrated it in detail. Devise separate assignments adapted to the needs of each group. Let each pupil practise the operations in which he is deficient until tests show satisfactory improvement, then assign other exercises involving new phases of the work.

4. **Criticism of procedures proposed.** The foregoing procedures are deficient in that they do not specify the subject matter needed by part of the class. Since the subject matter is not specified, the procedures are less definite than they should be. The principles selected from Part II, as indicated by the symbols, are far more comprehensive than the procedures proposed.

It is altogether probable that this teacher would have proposed more definite solutions if the solutions had been worked out while actually teaching the class. Even so, the problem involves several other difficulties that need not have been disregarded. For example, the procedures do not cover the con-

struction and use of written exercises (II. H), the means of supervising efficiently the study methods of the slow and fast groups (II. K), the means of securing the coöperation (IV. A) and stimulating the initiative (IV. C) of the slow group, nor for methods of dealing with the dull pupil as such (V. D. E). The suggestions contained in Part II with respect to these five type-difficulties might well have been applied to the problem. The merit of the proposed solutions consists in the emphasis placed on diagnosing difficulties and on individual treatment of the difficulties revealed.

## F. Teaching Appreciations by Presentation of Subject Matter

1. **Case problem No. 5.**[1] *The teacher of a ninth-grade class in American history frequently hears pupils remark that historical characters "are no fun to read about." The general tendency is to burlesque the characters and to regard them merely as names to be remembered in connection with certain events. This attitude is especially noticeable in the indifference toward supplementary reading. It is also evident in the lifelessness of oral reports. The teacher feels that the general situation might be remedied if pupils could be led to regard the characters as real people rather than figure-heads. The problem largely involves effective selection and presentation of supplementary material. (Type-difficulty I. K.)*

2. **Principles selected from Part II that apply to the problem.** I. G (1, 5), H (2), F (1, 2, 3), K (1, 2); II. D (1, 2, 4), F (1, 4), K (4, 5); III. I (1, 2); IV. A (1, 2), B (2, 3); VI. H (1, 2).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Begin a systematic collection of materials presenting historical characters in dramatic situations. The materials may consist of extracts from contemporary letters, historical fiction, historical

[1] Reported by a teacher of three years' experience.

plays, contemporary speeches, sketches, and biographies. Where such materials cannot be made accessible to pupils in the classroom, they should be copied for class reading and used as exhibits.

*b.* In presenting materials from fiction (*e.g.*, Drinkwater's *Lincoln*) encourage the class to discover discrepancies between the author's description and the known facts. Take much pains to present an accurate account of the character so as to emphasize heroic qualities. Have pupils collect facts unfavorable to the character when such facts contribute to a more accurate estimate of the character. The suggestion that uncomplimentary facts can be found in reliable sources is often a means of making the character seem more lifelike. Interest may be aroused by assigning different groups to report on different and conflicting accounts of the same character.

*c.* In discussing national heroes, the purpose should be to discover what the man was really like. Have pupils compete in obtaining significant facts from available sources that other pupils have overlooked. A convenient device for summarizing such discussions is to list separately the commendable and the unworthy actions of the character. Pupils may then form an estimate by debating the relative importance of the actions listed. Such estimates should at times be made by each pupil individually and at other times by the class as a whole.

*d.* Some characters may be studied to good advantage in terms of modern parallels. When the class is familiar with the predominant traits of a certain historical character, each pupil may list persons known to the rest of the class who exhibit one or more of the same traits. When such persons are discussed in comparison with the character, the class will discover that the character has other qualities in common with the persons compared. It should be made plain that illustrious figures of history differ from ordinary people in degree but not in kind.

*e.* When vivid and striking accounts of the characters have been collected for reading and report, arrange private conferences with pupils who have read certain materials. When time does not permit conferences with all pupils, the more indifferent pupils should be interviewed at least. The teacher should take this occasion to discuss the character in the light of the reading, as a means of emphasizing appealing qualities and actions that the pupil has overlooked. Experiment with readings of different kinds until types of character are found that the pupil sincerely admires. When a pupil has made an individual estimate of a character, he should make a report for group discussion. In conference the teacher should discuss what makes great men great, in terms of the pupils' own traits and ambitions. Indifference should yield to this kind of suggestion.

*f.* The value of collateral reading is increased by the teacher's attention to pupils' notes. The notes should be informal and brief. It should be sufficient to require that some notes be made on all reading and that the titles and pages be specified. Beyond such minimum requirements, pupils should be encouraged to write somewhat full reactions to both the content and form of the reading. The teacher should file the reading reports, if practicable. If the notes are not filed, they should be examined and returned with comment and suggestive questions on the material read.

*g.* At all points in the study of historical characters, pupils' estimates should be supported by evidence. General statements concerning the character should be challenged until the pupil can mention what the character did to justify the statement. Pupils' ability to discriminate between eulogy and accurate description should be tested by class discussion, oral reports, reading notes, private conferences, and written group tests.

4. **Criticism of solutions proposed.** The form in which the solutions are stated makes it difficult to distinguish specific

methods. Four sub-problems are involved; namely, selection of references, direction of reading, oral reports, and administration of private conferences. The general plan of procedure for each sub-problem is well chosen. Greater definiteness would result if the plans were developed in terms of particular characters, references, and the responses of individual pupils.

The teacher's exclusive attention to the teaching of historical characters perhaps leads to overemphasis of this phase of the course. The suggestions regarding the conference, for example, would appear impractical unless the study of characters, as such, is to receive more than a normal amount of time. In planning procedures to combat the indifference of certain pupils, the teacher might well have sketched the unit organization of which the character study is a part.

The solutions imply more critical ability on the part of ninth-grade pupils than can be safely assumed. Conventional estimates of national heroes are so standardized that they are hard to change. Primary sources are not easily found that make a strong appeal to indifferent ninth-grade pupils. There is also the question whether famous characters can be accurately represented to ninth-grade pupils without doing unnecessary violence to ideals of heroism. These difficulties and others must be met before the proposed solutions can be successfully applied. Granting that the references are properly selected from interesting material, appreciations are readily formed. The methods proposed should give the readings an emotional setting. Dramatic readings by the teacher are effective.

### G. Summary of Case Problems

The five case-problems presented are typical problems involved in the presentation of subject-matter. Taken together they probably represent the more important difficulties in connection

with selection of teaching materials. The relative importance of the type-difficulties reported (Part II, Section I) depends largely upon the nature of the class. Some of the type-difficulties can readily be solved in any class under favorable administrative conditions; for example, securing command of subject matter, making assignments, directing collateral reading, using effective examples, and clearness in explanation. Other type-difficulties can seldom be entirely removed without more systematic and intensive investigation than the teacher in service can undertake; for example, adapting subject matter to the needs of the class, making subject matter coherent, emphasizing material needed by part of the class, and forming sincere appreciations by presentation of subject matter. Yet, the difficulties are all intimately related. Hence, the teacher who works out satisfactory solutions for one or two significant problems, such as the case problems represent, is likely to avoid other difficulties as well.

### H. Procedure for Problem Solution (D)

Problems of subject matter can be anticipated and solved in advance more frequently than problems of the other types to be considered. Hence, the teacher saves much time and energy who makes a practice of collecting the facts about pupils whereby the course may be better adapted to their needs. The following procedure for solving problems of subject matter suggests the steps whereby any teacher may anticipate the more significant problems in subject matter selection before they become acute.

1. **Determine the specific objectives of the course in terms of the given class, as follows :**

*a*. List the main divisions or topics of subject matter contained in the course as taught. A list of from fifteen to twenty topics should be sufficient for a semester course.

*b.* List the different kinds of work that pupils are expected to do in learning the material — for example, translate, memorize, outline, solve problems, give oral reports, make written reports, carry out projects, perform experiments.

*c.* Go over both lists and ask yourself the questions: "Why should this class learn these topics?" and "Why should the class learn to do these things?" The answer you give should be stated in terms of the most useful application that the average pupil is likely to make of each topic. Write down the useful applications opposite the corresponding topics. Then do the same for the other list of learning activities.

*d.* Evaluate both lists of applications and select the more significant. Regard these as the specific objectives or desired outcomes of the course for use in improving the selection of subject matter and in organizing teaching procedures.

2. **Organize the existing course of study into teachable units, as follows:**

*a.* Read rapidly through the textbook or outline, noting down principles or topics that may serve as independent units or important divisions of the course. The topics so noted should be phrased in the form of broad questions that are entirely clear to the pupils as stated — *e.g.*, "Why the north opposed the addition of new slave states in the south" — rather than a meaningless topic like "The Missouri Compromise"; "Why fire burns" rather than "heat," and the like in other content subjects. Each unit should require not less than one week's work.

*b.* Make a topical outline of the entire course and list the topics in a column, leaving space for about ten blank vertical columns opposite the lists. Submit the list to about five teachers or others who are competent to organize such a course. Ask each to examine the topics and select unit titles that serve best

to organize the topics from the *standpoint of the pupil.* Then direct each critic to write the titles chosen at the top of the vertical columns and check off each topic of the list in the column considered most appropriate. When such suggested groupings of the topics have been returned by each of the critics, revise your own selection of units according to any valuable suggestions received. Then discuss the tentative units with each critic.

*c.* Assign the topics of the course to one or more of the units selected. When not all the material can be covered, select the material contributing most directly to the objectives. Substitute new material more useful in teaching the specified units.

3. **Collect explanatory examples, illustrations, problems, and exercises for use in teaching each unit effectively, as follows:**

*a.* Go over the factual content of each unit and record as many points of contact as possible between the items to be taught and matters that are already familiar and interesting to the given class. Note such points as possible applications to the pupils' experience. Encourage pupils to suggest such applications.

*b.* Select the more useful applications and let them suggest specific illustrations to be used in presenting the more abstract and unfamiliar material contained in the unit.

*c.* Invent exercises and problems that apply the principles and facts contained in the unit to life situations within the pupils' reading or actual experience.

4. **When a given unit is under way, determine the desirable emphasis of material contained in the unit, as follows:**

*a.* Give pretests and observe pupils at work to discover the pupils whose preparation for study of the unit is deficient and also to discover the particular deficiencies, such as limited expe-

rience, ignorance of material contained in previous courses, or faulty methods of study.

*b.* Test the class frequently by exercises that require different items of subject matter to be related to the general problem or topic of the unit as a whole.

*c.* Emphasize materials that pupils cannot relate to the unit by assigning special readings and exercises to such pupils. Consult other teachers for help in anticipating the points requiring special emphasis.

*d.* Record the difficulties met by individual pupils in forming the appreciations, solving the problems, understanding the principles, and acquiring the skills involved in the unit. Supply other material that is useful in helping the pupils to overcome such difficulties — for example, vivid anecdotes and impressive descriptions to teach appreciations, simpler exercises and problems that suggest how the larger problems may be solved, simple explanations and illustrations of the principles, and demonstrations of the necessary skills in the form of practice exercises.

# CHAPTER IV

## PROBLEMS IN DIRECTING PUPILS' LEARNING

### A. Summary of Factors Involved

The purpose of the chapter is to discuss typical problems that arise in helping pupils to learn any specified subject matter. The chapter thus runs parallel to the chapter preceding. The problems involve the type-difficulties of Part II, Section II.

1. **Assumptions.** For reasons previously stated, the present discussion assumes that subject matter has already been selected and organized into teaching units. Subject matter constitutes the most tangible basis for selection of teaching procedures. One can always determine (by experiment if need be) which one of various procedures is most effective when used by a given teacher to teach specified material to a given class. Teaching procedures cannot be evaluated until the subject matter to be taught has been defined.

Another assumption is made to facilitate discussion. It is assumed that methods of instruction can be differentiated from methods of class management and pupil control. In actual classroom practice, of course, all procedures work together. Better teaching simplifies class management. Class management does much to economize and assist the pupils' learning. Yet, since class management applies more specifically to the pupils' social conduct and attitude in the classroom than to the learning of specified subject matter as such, the problems of class management are assumed to be distinguishable from methods of

instruction strictly defined. Problems involving class management are accordingly reserved for separate treatment in later chapters.

The limits of the present chapter are best defined by the type-difficulties themselves. As listed in Section II of Part II, the seventeen type-difficulties arise in the teacher's efforts to direct the learning process. The teaching procedures involved are thus what are usually described as "special methods," in that their relative importance and manner of application depend upon the subject taught.

2. **General methods *vs.* special methods.** General and special methods are to be distinguished rather by applications to particular subject matter than by any marked difference in type.[1] Specific methods of applying any type procedure, for example, "The direction of oral reports," will differ considerably between two such subjects as civics and a foreign language. The importance of the procedure will also differ in teaching the two subjects. But oral reports are sometimes used by all high-school departments. Certain other procedures, of course, are peculiar to certain subjects, such as laboratory direction in science, practice work in art, domestic science, and shop courses, and pronunciation drills in foreign language. Difficulties reported in connection with such procedures are discussed under the type-difficulties to which each is most closely related. The type-difficulties thus apply sufficiently well to all subjects.

3. **Pupils' difficulties as criteria for teaching methods.** The relative importance of teaching procedures is determined by subject matter only insofar as the pupils' difficulties in learning the subject matter are known. The single purpose of teaching method is to remove pupils' difficulties in learning. Various types of difficulties will arise when any particular class is learn-

[1] See ratings of type-difficulties for different subjects, Appendix K.

ing to solve quadratic equations. Some of them will be due to ignorance of principles, others to lack of accuracy in applying fundamental processes, still others to faulty study habits. No one standardized teaching procedure can possibly relieve all the difficulties encountered by each member of the class. The nature of the difficulties must determine the methods of instruction used. Hence, the particular difficulties met by the individual members of a class in learning the specified material are definite criteria for the selection of teaching methods. To identify the particular learning difficulties to be removed is thus to determine the immediate objectives of method.

Pupils' difficulties in learning may be discovered in many different ways. The best way is to observe the pupil at work. By close observation of from five to ten pupils daily, individual difficulties are readily noted and recorded. Group tests are usually the most economical means of revealing the difficulties of the class as a whole. Yet, before any method of locating difficulties can be used to good advantage, the teacher should know how the given subject is most efficiently learned. When the teacher knows what pupils do in learning the subject successfully, it is easier both to anticipate and to detect the pupils' difficulties in doing these things. The teacher should accordingly analyze the process of learning the subject into specific pupil activities.

Pupils' learning activities in a given subject are described in various sources and in various degrees of detail.[1] The commoner sources are texts in educational psychology, texts in general method, texts in special method, and monographs, theses, or articles containing reports of experimental studies. The sources are mentioned here in order of increasing value. Books on educational psychology and general method seldom contain more

[1] See bibliography of Special Method.

than a list of the principles or major steps that the learning process involves. Some texts in special method analyze various factors in learning, for example, " outlining " in English composition, " translation " in foreign language, " induction of principles " in natural science. No special-methods text known to the writer contains a systematic analysis of the activities involved in learning all significant phases of the subject. Technical studies also tend to select some phase of learning for special study rather than to present the important activities in learning the subject as a whole.

4. **Pupils' difficulties located by analysis.** A detailed list of the activities performed by pupils in learning the given subject is thus of great value in locating difficulties in learning. Each subject should have a separate list. The teacher might then check the activities that prove most difficult in the given class and seek teaching procedures to remove the difficulties. Until such analyses are made in each of the subject fields, the teacher must fall back on general lists. A general list of pupil activities appears in Appendix B.[1] From such a list any teacher may construct a more useful list by selecting the activities that apply to the given subject and adding others of equal importance. When the activities of the general list have been adapted to the particular course, still other activities may be added by observing pupils at work, by interviewing them, and by readings in the psychology of the given subject.

An inclusive list of the pupils' learning activities for a given course or subject is sufficiently useful to justify the labor involved in making it. The list is useful in planning methods of instruction in advance that will provide adequately for all significant learning activities. It is also useful in locating the difficulties

[1] This list was constructed by classification of the pupil activities reported by a sampling of 6550 teachers of all grades.

of a given class by checking the activities that certain pupils find troublesome. This somewhat mechanical process is usually more reliable than the teacher's observation alone.[1] To the experienced teacher the list itself will prove useful in anticipating pupils' difficulties. When significant learning difficulties can be anticipated, it is of course easier to plan teaching procedure to overcome them.

5. **Illustrative analysis.** Three specimen lists will be shown to illustrate different types of analysis. The first is a brief outline of the pupils' activities involved in the work of any unit in any course. The second is an abbreviated statement of the activities involved in learning the unit on positive and negative numbers in a course in junior high-school mathematics. The third is a somewhat complete analysis of the activities involved in constructing graphs. Each type of list is useful in the selection of teaching procedures. The more detailed analysis naturally reveals more specific difficulties.

*a. Activities involved in learning any high-school unit.* Many experienced teachers become habituated to certain procedures in conducting the work of a unit. Such procedures quite frequently do not take sufficient account of important steps in the pupils' learning. The following outline contains eight such steps in which most pupils require assistance. No teaching procedure is entirely adequate unless it provides the amount of stimulation, direction, or assistance required by each pupil in taking each step. The outline is accordingly useful as a basis on which to check the adequacy of teaching procedures applied to the unit as a whole.

(1) Finding out clearly what is to be done and why it is worth while.

(2) Finding out specifically how to begin to do the work.

[1] See the illustration of Procedure A, pp. 46 ff.

(3) Doing as much of the work as possible and locating difficulties.

(4) Finding out how to overcome difficulties.

(5) Completing the work assigned.

(6) Finding out how well it has been done, finding mistakes.

(7) Correcting mistakes, checking results.

(8) Using the results, relating assignment to course as a whole.

*b. Activities involved in learning a unit in mathematics.* The following list of activities[1] was obtained by classifying some four hundred pupil activities reported by teachers of high-school mathematics. The list contains merely the headings used in classifying some one hundred and five specific activities related to the unit of positive and negative numbers. The items are so general in statement that they are perhaps best used as teaching objectives for the unit. As such, the items help to suggest appropriate *types* of teaching procedures rather than specific procedures. More specific activities would be needed to locate specific difficulties in learning:

Pupil activities involved in the unit of positive and negative numbers.

1. Understanding the meaning and practical uses of signed numbers.
2. Extending the number system by use of negative numbers.
3. Adding numbers graphically, and by rule.
4. Adding, subtracting, multiplying, and dividing signed numbers with *accuracy* and a fair degree of *speed*.
5. Becoming familiar with the business practices involving use of directed numbers.
6. Distinguishing between plus and minus signs as signs of quality and signs of operation.
7. Solving an equation in one unknown when any positive or negative number may be taken as coefficient.

[1] Used by permission of Charles A. Stone, University High School, University of Chicago.

8. Adding polynomials involving signed numbers.

9. Subtracting polynomials involving signed numbers.

10. Multiplying polynomials having signed numbers.

11. Dividing polynomials involving signed numbers.

12. Appreciating the use of directed numbers in connection with formulas, thus extending their use.

13. Understanding the connection between directed numbers and the coördinate system.

14. Evaluating expressions involving positive and negative numbers.

15. Factoring expressions involving positive and negative numbers.

16. Solving problems involving signed numbers.

17. Removing parentheses and inserting quantities in parentheses where directed numbers are used.

18. Solving equations containing two unknowns involving positive and negative numbers.

19. Using inequalities involving positive and negative numbers.

20. Manipulating fractions involving positive and negative numbers.

21. Finding the product of and squaring binomials.

*c. Pupils' activities in learning the elements of graphing.* The following list [1] is composed of more specific activities. It will be noted that the items are sufficiently definite to indicate most of the specific difficulties which pupils are likely to encounter in learning the elements of graphing. By checking the list while the class is engaged with the unit, the learning difficulties are readily recorded. Such difficulties constitute a reliable basis for selecting specific teaching procedures.

1. Studying a graph that another has constructed.
   (*a*) Noting the ruling of the paper.
   (*b*) Noting the relation between the axes.
   (*c*) Learning the names of the axes.

[1] By courtesy of C. F. Humphrey, University of Chicago.

(*d*) Learning the name of the point of intersection of the axes.
(*e*) Learning the relation between sign of the value of the variable and direction on the axes from the origin.
(*f*) Learning the designation of the quadrants.
(*g*) Studying how a given point has been plotted.

2. Constructing a table of values.
   (*a*) Noting the form in which the table is constructed.
   (*b*) Practicing the construction of a similar form.
   (*c*) Selecting an equation to be plotted.
   (*d*) Computing the values needed in the table.
   (*e*) Checking the values by substituting in the equation.
3. Plotting a curve.
   (*a*) Noting a value of $x$ or one variable.
   (*b*) Counting on the $x$-axis.
   (*c*) Noting a corresponding value of the other variable.
   (*d*) Counting on the $y$-ordinate at the point found on the $x$-axis.
   (*e*) Repeating above steps for each value.
   (*f*) Drawing straight lines with a ruler to connect plotted points.
   (*g*) Judging where to place margin on paper so entire graph can be plotted on the sheet of paper.
   (*h*) Judging where to place margin on paper so graph will be attractively placed on the paper.
   (*i*) Selecting units of measure on the two axes.
   (*j*) Checking plotted points to see if they have proper values.
   (*k*) Plotting other curves.

The foregoing illustrations should suggest the value of analyzing pupils' learning activities as a means of selecting efficient teaching procedures. Many of the activities included in such lists are comparatively trivial, such as "judging where to place margin on the paper." Others, however, are highly significant in the learning process, are likely to cause the pupil serious difficulty, and are likely to escape the teacher's observation unless suggested by such a written list. The correction of teaching difficulties depends upon the identification of such difficulties in learning by analyzing the pupils' learning activities.

6. **Type-difficulties organized.** The most inclusive difficulty in helping pupils to learn subject matter is obviously "how to supervise and direct pupils' study." (II. K.) The term "study" is sufficiently broad to cover all the pupils' activities in learning the specified subject matter. This type-difficulty accordingly includes most of the others with which this chapter deals.

The remaining sixteen type-difficulties of the section can be discussed to better advantage if arranged in related groups. The following groups correspond roughly to the steps the pupil takes in learning, thus emphasizing the relation of teaching procedures to learning procedures.

*a.* The first group consists of planning. (II. A.) The teaching difficulties involved in planning are those that arise in testing and studying the pupils to determine their probable difficulties in the work of the unit. Planning also involves, of course, the selection of procedures whereby the pupils' difficulties are best avoided or minimized.

*b.* The second group includes difficulties in giving oral directions; namely, questioning (II. B), treating pupils' statements (II. C), encouraging pupils to criticize (II. D), keeping discussion to the point (II. E), conducting oral recitations and exercises (II. G), and making adequate explanations (II. L). Procedures of these types are useful in presenting and explaining the work to be taken up, in checking the explanation by questioning, in drawing out pupils' experiences of value to the group, in developing a critical attitude toward the subject matter, in directing group attention to a desired point of view or point of common difficulty, and in directing such oral exercises as may be required by the nature of the subject matter (*e.g.*, foreign language, expression, or literature courses) or such as may help pupils to learn from others' mistakes. It is clear that the teaching difficulties

of this group are hard to anticipate. They arise most frequently in failure to secure satisfactory responses from individual pupils. The procedures serve in general to explain the work to be done, to develop the right learning attitude, and to supply the specific directions that individual pupils require.

*c.* The third group contains difficulties in supplying the materials and written directions whereby pupils can best work independently; namely, assigning oral reports (II. F), conducting written exercises (II. H), directing vocabulary study (II. I), interrelating the work of the course (II. J), outlining material (II. M), conducting drill work (II. N), and reviewing (II. O). The significant common element in these procedures is that all can be systematically planned out of class. Such procedures are therefore more readily standardized. The collection of references and problems for oral report, the construction of written problem exercises for individual study during the period, the preparation of word lists, guide sheets, outlines, drill exercises, and review projects — all may be studied by the teacher at leisure and tentative solutions may be improved by further study. Taken as a whole, the teaching difficulties of this group are those which ordinarily require most attention. Study materials that are self-explanatory and sufficiently thought provoking to the average pupil are the most efficient single means of directing pupils' learning. The chapter is largely devoted to the problems of this group.

*d.* The fourth group comprises testing. (II. P.) As a means of directing pupils' study, the test is significant in many ways. The teaching difficulties involved in testing are perhaps not sufficiently distinct from other difficulties to constitute a separate group. Difficulties in constructing efficient tests belong clearly to group three. Yet, difficulties in the use of tests to reveal pupil difficulties requiring further instruction are highly

significant. Frequent and skillful testing to locate pupils' difficulties in learning is an essential factor in improving the efficiency of all other teaching procedures. Testing for this purpose includes all methods of studying individual pupils, such as observation, interviewing, and consulting other teachers.

7. **Teaching procedures outlined.** To supplement the foregoing groups of significant teaching difficulties, there is need for a corresponding statement of significant teaching procedures. To outline procedures separately for each subject would exceed the limits of this volume. The alternative is to submit a very general indication of procedures that may apply to all subjects, — thus leaving to the individual teacher the task of working out their specific applications to the given field.

*a. A type-procedure for classroom instruction — all subjects.* The following outline may readily be interpreted and expanded by the references supplied for this chapter. Each of the steps listed below is involved in the teaching of any high-school subject. As applied to different subjects the relative importance of the steps will vary considerably. The four steps correspond roughly with the four groups of difficulties just discussed.

*Step 1. Planning and preliminary testing;* which involves:

(*a*) Testing to find out what the pupils already know about the unit from reading and experience.
(*b*) Noting parts of the subject matter that require special emphasis in the light of the tests.
(*c*) Noting pupils whose preparation for the unit is conspicuously good or conspicuously poor.
(*d*) Planning means of making up for individual deficiencies, and
(*e*) Preparing tentative problem exercises, reading lists, and tests for group as a whole.

*Step 2. Introducing the unit and explaining methods of study;* which involves:

(*a*) Presenting an outline of main problems or topics contained in the unit.

(*b*) Explaining and illustrating the outline until the central principles or problems or facts of the unit are made clear.

(*c*) Questioning, discussing, conducting oral exercises, directing pupils' criticism, and giving brief group tests to determine how well the class has grasped the preliminary explanation of the unit.

(*d*) Reëxplaining wherever necessary to correct misunderstanding of points presented.

(*e*) Applying similar procedures to develop an appreciative attitude toward the material to be studied, and

(*f*) Explaining or working out with the class the steps which are considered most efficient in learning the unit – *e.g.*, in selecting material from texts, organizing reports on the unit problems, understanding new principles, conducting experiments, and the like. Such methods of study should be illustrated until fully understood.

*Step 3. Providing study materials and supervising their use;* which involves:

(*a*) Presenting problem exercises based upon the various sub-problems involved in the unit on which each pupil may work independently during the class period.

(*b*) Presenting selected readings and references for classroom use in connection with the exercises.

(*c*) Outlining supplementary projects where desirable.

(*d*) Preparing drill exercises (when not found in texts) to develop requisite skills in dealing with content of the unit.

(*e*) Submitting "directions for study" in the form of guide sheets where needed to interrelate the various parts of the unit.

(*f*) Noting difficulties encountered by individual pupils by observing their results and methods of work.

(*g*) Removing such difficulties by brief individual instruction during the period or by group discussion and further study of common difficulties, and

(*h*) Reviewing and summarizing the material covered by independent study through oral reports, outlining, supplementary problem exercises, and unit reports by each pupil.

*Step 4. Testing;* which includes

(*a*) Examining written work to discover group deficiencies, errors, and other difficulties.

(*b*) Using short answer tests to detect significant misunderstandings of the material studied and explained.
(*c*) Conducting private interviews with certain pupils to discover and correct inefficient methods of work, and
(*d*) Revising emphasis of different parts of the unit and of teaching procedure when tests show the need of such revision.

8. **Selection and treatment of case problems.** Of the four steps outlined, step 3 is the only one that is sufficiently definite to be adequately planned in advance. Step 4 is next in order of definiteness, with step 1 next and step 2 the least definite. Procedures that depend largely upon written materials may be worked out with some assurance of their usefulness. For procedures that depend largely upon pupils' reactions, as in class discussion, no solutions can be offered in advance beyond general principles to direct the teacher's practice. On this account, the case problems considered below are largely concerned with steps 3 and 1. Step 4 is adequately covered in the references. Step 2 is perhaps covered as well by the proposed solutions of Part II as methods of directing discussion can be covered by abstract principles.

The following case problems are thus confined largely to problems in the organization of classroom study and in the preparation of study materials. For greater definiteness, the analysis of each problem is more closely confined to the type-difficulty than is the case in Chapter III. Elements of the problem that clearly do not concern methods of teaching the given subject matter are reserved for separate treatment in other chapters. The criticism of solutions proposed is also more condensed.

## B. Planning Methods of Improving Study Habits

1. **Case problem No. 6.**[1] *The members of a ninth-grade class in American history are more than usually conscientious. Only*

[1] Reported by a teacher of two years' experience.

*rarely does a pupil fail to hand in work assigned. The average amount of home-work per pupil per week is five hours. This class was recently given a test upon material studied during the preceding month. Less than half of the papers showed any satisfactory grasp of the material. Specific facts were produced on demand, but the class as a whole had evidently found little meaning in the daily assignments and had not combined them into an organized whole. The condition is evidently due to faulty study habits.* (*Type difficulty II. A.*)

2. **Principles selected from Part II that apply to the problem.** I. D (3, 4, 5, 7); II. A (2, 4, 5), K (2, 6, 8, 9).

3. **Solutions proposed by the teacher reporting the problem.** *a. In planning.* The teacher should note and classify the significant difficulties met by individual pupils in each unit. A detailed outline of material contained in the course should help the teacher to anticipate such difficulties. The material assigned in connection with each unit should be so organized that its application to the central idea of the unit is entirely obvious. The teacher should explain the central principle of the unit and require each pupil to relate his reading to the principle with the best original illustrations he can find. Directions for efficient study should be demonstrated by the teacher in connection with each type of assignment. Different types of exercises should be planned to give practice in overcoming the different types of difficulty that pupils meet in studying and in combining separate assignments into meaningful wholes.

*b. In making assignments.* More attention should be paid to finding out which pupils are able to study efficiently. Home study should be voluntary until pupils have shown by their work in class that they know what they are about. No home-work should be assigned to all pupils unless it can be done as well outside of class as in class. Difficulties can thus be discovered

and explained before the pupil becomes confused. Proper attitudes toward the work should be developed before individual study is undertaken. Such attitudes are developed by group discussion, readings by the teacher, and short presentation talks containing familiar illustrations. Reflective thinking should be developed by careful selection of problem-situations to which the historical material applies.

*c. In supervising study.* Any assignment not clearly understood should be repeated. The essential directions for study should be written on the board for pupils to refer to. If the assignment is well chosen, any misunderstandings can be cleared up by individual explanation. Differences in ability to understand text materials should be met wherever possible by individual assignments and individual drill in silent reading. Pupils should be drilled also in whatever methods of study they have not learned. Practice exercises may be constructed to correspond with a list of directions for study applying to the particular course. Pupils' study should be interrupted by the teacher's explanations whenever they are needed. Pupils' individual work during the period should consist in reading the text and other references, outlining, taking and organizing notes, solving illustrative problems, and collecting material for oral and written reports upon the unit as a whole.

4. **Criticism of solutions proposed.** The solutions help to emphasize the uselessness of suggestions that are not carried out to the point of classroom application. The foregoing procedures are simply extracts from Part II. Except that they are selected with reference to the given situation, the principles themselves are in no sense adequate solutions for the problem. The principles only become useful when such items as " illustrative problems," " study directions," " teacher's talks," " teacher's readings " and the like, are actually worked out, as in case

problem No. 7. As methods of correcting pupils' faulty study habits, the solutions proposed are entirely unsatisfactory in their present form. As methods of planning a change from home-study to class-study, the procedures are more satisfactory but still inadequate. Part II contains other principles in connection with directing individual work and providing materials that are fully as appropriate as the principles selected.

The following problem also concerns the planning of a supervised study procedure. The solutions proposed are far more satisfactory because they are ready for classroom use.

### C. Planning Instruction for the Unit as a Whole

1. **Case problem No. 7.**[1] *A class of high-school boys in a course in agriculture does not respond satisfactorily to the conventional recitation procedure. Pupils' answers follow the text discussion so closely that independent thinking is difficult to secure. There is not sufficient attention paid to actual farm conditions. The problem consists in organizing a new type of classroom procedure whereby each pupil may be directed to his best advantage. The subject matter is defined by the unit on "the selection of farm land best suited to the growing of oats." (Type-difficulty II. A.)*

2. **Principles selected from Part II that apply to the problem.** I. C (1, 4, 5, 6, 9), D (2, 3, 4, 6, 7), G (1, 4), I (4); II. A (2, 4, 5), D (1, 3, 4), G (1, 2, 6), H (3, 4, 5), K (1, 5, 6, 8, 9); III. E (1, 2, 5), F (3, 5, 7).

3. **Solutions proposed by the teacher reporting the problems.** *a.* Discover the pupils' experience in relation to the unit by group discussion, or better, by an informal diagnostic test. The following test should serve to indicate what phases of the unit

[1] Solutions quoted by the author's permission from F. W. Lathrop, "The Use of the Class Period," *The Visitor*, University of Minnesota (Oct. 1926).

require most emphasis and may indicate that some material can be safely omitted.

CHECKING EXERCISE ON EXPERIENCE

*Directions:* Read the following statements. Check each statement that suggests an experience you have had, an observation you have made, or a conversation you have heard. Write a brief sentence after each statement checked, giving the nature of the experience, observation, or conversation.

——1. My father figured the amount of man labor on our 10 acres of oats.

——2. My father compared oats and barley to see which crop demands work during the busy seasons of other crops or animals.

——3. The neighbors did not agree as to the part of the United States best adapted to oats.

——4. Very often good corn years are not good oat years and vice versa, as shown by our yields at home.

——5. My father says there is a difference between oat and barley straw, both as to feeding and bedding value.

——6. I have noticed a difference in the stand of clover when barley is used as a nurse crop instead of oats.

——7. The land is not prepared for barley in the same way as it is for oats.

——8. When we raise both barley and oats we find out which is the weedier of the fields on which they are to be sown.

——9. My father remarked that if small grains must be planted on plowed sod, it makes a difference which small grain is selected.

——10. The price of oats is higher during certain months.

——11. We grow about the same acreage of oats each year as we do of corn.

*b.* Introduce the study of the unit by a well-organized talk from the teacher or by assigning individual study of selected references. The selected references are

Montgomery, *Productive Farm Crops*, Chapter 21.

Minnesota Agricultural Experiment Station, *Bulletin*, No. 205.

U. S. Department of Agriculture, *Yearbook*, 1922.

Wisconsin Agricultural Experiment Station, *Bulletin*, No. 304

*c.* The outline of an introductory talk on the unit is as follows

OUTLINE OF PRESENTATION. WHAT LAND ON MY FARM SHALL I PUT INTO OATS NEXT SEASON

1. Tabulate the acreage of oats at pupils' homes during the past season. Show range and median.
2. Get reasons from pupils why their acreages might have been too large or too small.
3. Factors determining the correct acreage of oats:
   (*a*) The labor requirements of oats.
      i. Rank local crops as to man hours required to grow an acre.
      ii. Show monthly distribution of labor required for oats.
   (*b*) Climatic requirements.
      i. Define climate.
      ii. Give the states having the largest oat acreage and give reasons.
      iii. Show why corn belt has large acreage.
      iv. Describe best oat climate.
   (*c*) Contribution of oats to the farm business.
      i. Straw used for feeding and bedding.
      ii. Oats a valuable feed for horses and young stock.
      iii. Oats serves as a nurse crop.
   (*d*) Competing crops.
      i. Reasons why oats and barley compete.
   (*e*) Cost of producing oats.
      i. Get estimate from class on cost per bushel.
      ii. Take amounts of labor and materials per acre of oats in Minnesota bulletin 179 and find cost of production according to present prices.
   (*f*) Price of oats.
      i. Show price curve in *U. S. D. A. Yearbook 1922.*
      ii. Explain why oats are grown even though profit is small.
4. Factors determining on which field to sow oats:
   (*a*) Soil requirements of oats.
      i. Describe soils best adapted and check with pupil observations.
   (*b*) The place of oats in the rotation.
      i. Explain meaning of rotation if necessary.
      ii. Why grown after corn or potatoes.
   (*c*) How much land available on farms.
      i. Brief survey of farms represented in class for size of fields in rotation.

*d.* Determine by a test like the following, how fully the class understands the explanatory talk before proceeding to study the unit:

TEST ON INTRODUCTION

Put appropriate words in blank spaces.

1. The oat plant thrives best in a —— soil.
2. The oat plant is best adapted to —— weather.
3. Oats usually follows a —— crop.
4. Rank corn, hay, oats in respect to the time required to grow one acre.

i —— ii —— iii ——

5. The heaviest demand for labor on oats comes at the —— period.
6. It cost approximately —— cents per bushel to produce oats in Minnesota in 1926.
7. The price curve in the *U. S. D. A. Yearbook* showed a range from —— to —— cents per bushel.
8. Three important reasons for growing oats are

(1) —— (2) —— (3) ——

*e.* Provide problems involving the major principles of the unit, the problems to be studied in connection with a variety of selected references.

1. A farmer is trying to decide on which field to grow his oats during the coming growing season (1927).

Field A has a clay loam soil; it has been in clover during the past season (1926).

Field B has a sandy loam, corn was grown on it in 1926; the soil is slightly acid; the topography is rolling.

Field C has silt loam; corn was grown on it in 1926; it is infested with sow thistle; it is level.

Which field would you select? Why?

2. One farmer is putting forth arguments in talking with his neighbor favoring the growing of oats rather than the growing of barley. Check the arguments which are sound.

—— Oats produces more total nutriment per acre.
—— Weeds may be combated better by a crop of oats.

—— Oats does better relatively on a sandy soil.
—— Oats requires less soil preparation.
—— Oats is a more effective nurse crop.
—— Oats straw is more readily eaten by stock.

3. Graph the distribution of man labor by ten-day periods for corn, oats, timothy and clover, barley.

In what way does oats conflict with corn, barley, timothy and clover?

In what way does barley conflict with corn, oats, timothy and clover?

4. Determine the items that make up the cost of producing oats. If you are to reduce the cost of producing oats, which items offer the most promising attack? Is it possible that you might decrease cost per bushel by increasing certain of these items? Give reasons.

5. Tabulate for your county and Kittson County, Minnesota, the data on climate, including inches of rainfall, mean temperature, days in growing season, average date of last frost in spring. From these data draw conclusions as to whether your county has as good oat climate as Kittson County. Give reasons.

REFERENCES TO BE STUDIED IN CONNECTION WITH THE ABOVE PROBLEMS

Cox, J. F., *Crop Production and Soil Management*, Chapter 2.
MONTGOMERY, E. G., *Productive Farm Crops*, Chapter 21.
U. S. D. A. *Yearbook*, 1922, pp. 476–477.
University of Minnesota Geological Survey, *Bulletin*, No. 12. Chapter on Climate.
Minnesota Agricultural Experiment Station *Bulletin*, No. 205, p. 42.
Minnesota Agricultural Experiment Station *Bulletin*, No. 170, p. 40.
Missouri Agricultural Experiment Station *Circular*, No. 105.
Wisconsin Agricultural Experiment Station *Bulletin*, No. 304.

*f*. Supply additional problems in connection with field projects or supplementary reading to be assigned to individual pupils. Such individual problems should be reserved until the basic group work on the unit has been completed. The assignments will naturally depend upon individual needs and opportunities for practical experiment. (Sample projects and references are not quoted.) When the assignments have been

completed, the pupils present the results in the form of written or oral reports.

*g*. Test the pupils' understanding of the basic principles of the unit studied. The following test is illustrative.

1. **Unit Test.** Mark each statement true (+) or false (o). In a brief sentence indicate reason for your answer.

—— (*a*) A sandy loam should be selected for growing oats.
—— (*b*) Oats may be seeded after sod with better results than barley.
—— (*c*) A dry season favors oats rather than wheat.
—— (*d*) Oats demands a rich fertile soil.
—— (*e*) Oats is not so desirable a nurse crop as wheat or barley.
—— (*f*) Oats is sown later than barley and therefore there is more opportunity to work the land and rid it of weeds.
—— (*g*) Oats is better adapted to the climate of northern Minnesota than to the Corn Belt.
—— (*h*) Oats has a low lime requirement.
—— (*i*) If a farmer must buy a straw to feed, it would be better to buy oat straw, if a choice is offered.
—— (*j*) Corn is a more desirable feed for growing animals than oats.
—— (*k*) Labor is relatively a more important cost in growing corn than in growing oats.

2. State which field at home you believe should be sown to oats during the coming season. Give acreage. State reasons for your decision.

4. **Criticism of solutions proposed.** The foregoing plan for directing the study of the unit contains commendable features only. Particularly commendable is the relation between general statements and specific applications. The general statements are reduced to the minimum required to explain how the materials are used. The specific applications are as detailed as they can be. Greater detail would result in a mere record of what took place as the class worked through the unit. Such a record is useful but is necessarily impossible to anticipate. The plan is also commendable in that the principles of Part II are used

merely for what they are worth and in each case are adapted to the actual problem. Case problem No. 6 presents an opposite extreme. The principles themselves are proposed as solutions with little or no modification to fit the classroom situation.

### D. Directing Pupils' Criticisms

1. **Case problem No. 8.**[1] *A seventh-grade class in oral English contains pupils mostly of average ability with three gifted pupils and five who are indifferent to English work in general. The teacher's purpose is to teach the art of helpful criticism as a means of individual improvement in speech. The difficulty arises from the disposition of the three bright pupils to offer disparaging criticisms only. Such criticisms tend to prevent the less-able pupils from saying anything at all and make the bright pupils intolerant of others' criticisms.* (*Type-difficulty II. D.*)

2. **Principles selected from Part II that apply to the problem.** II. C (2, 5), D (1, 2, 4), E (3, 5), F (1, 3, 5), G (1, 2, 3, 5, 6); IV. A (1, 3, 4, 7), D (8, 9).

3. **Solutions proposed by the teacher reporting the problem.** *a*. Cultivate the right audience situation by careful selection of subject matter. Take pains to find experiences that pupils wish to tell to classmates. Find articles, stories, and clippings for pupils to read and report upon. Use collections of material like Davis and Getchell's *Stories of the Day's Work*, which all members of the class may read and be prepared to discuss.

*b*. Explain the importance of being able to speak well until the class is convinced. Illustrate common mistakes. Explain the difference between adverse and constructive criticism. Confer individually with pupils who are not convinced until their attitudes change.

[1] Reported by a teacher of two years' experience.

*c.* Assign group reports as well as individual reports. Divide a given topic among four or five pupils to be reported and discussed as one unit. Such teamwork should make for closer coöperation.

*d.* Develop with the class as a whole a few brief standards for criticism. Add to these as occasion demands: for example,[1]

ORAL DELIVERY

1. Stand erect.
2. Speak slowly and distinctly.
3. Face your audience.
4. Do not use too many "and's" and "so's."

CONTENT OF TALK

1. State the title or subject of your talk.
2. Have a good beginning sentence.
3. Stick to one point.
4. Have a good ending sentence.

*e.* Emphasize the fact that all pupils will be judged by the same standards. Write the standards on the board. Work out with the class the notion that an even balance should be kept between favorable and unfavorable criticism. Ask to have one favorable comment made first.

*f.* Vary the procedure by having each pupil use the standards as a self-checking device. Variety may also be introduced by having all pupils write criticisms of the same speaker. Such ratings may then be summarized by the teacher on the board with a show of hands on each standard.

*g.* Appoint class committees or a class secretary to record and report such items as mistakes most frequently made, most popular subjects, most favorable criticisms, and most tactful criticisms.

[1] From Cowan, Betz, and Charters' *Essential Language Habits.*

4. **Criticism of solutions proposed.** The solutions bear slight relation to the principles selected from Part II. The significant omissions have to do with principles concerning the treatment of pupils' statements (II. C), keeping discussion to the point (II. E), oral reports (II. F), oral exercises (II. G), and making pupils courteous (IV. D). The solutions have, however, the advantage of obvious practicability, which is more important than completeness. Still the solutions are too sketchy. More specific procedures are needed with regard to methods of cultivating the audience situation, methods of explaining the importance of ability to speak well, and methods of selecting material for the oral talks. Greater definiteness would be secured if some actual talk had been outlined and followed by the procedures needed to secure constructive criticisms of the talk. The problem chosen is one in which much help might have been secured from the special method literature on oral English in junior high school grades.

## E. Making Adequate Explanations

1. **Case problem No. 9.**[1] *A tenth-grade class of twenty pupils in biology is slow in getting to work under a system of supervised study. The procedure is to assign a textbook chapter for study in class and later discussion; then to follow the textbook work with project reports based on collateral readings. Difficulties arise in that pupils vary in their ability to grasp the central idea of the textbook assignment; some have it clearly, others not at all. When the teacher explains the textbook in detail, the bright pupils do not have to read the material, yet the slow pupils do not fully understand the oral explanation. (Type-difficulty II. L.)*

2. **Principles selected from Part II that apply to the problem.** I. C (5, 9, 10, 11), G (1), H (4), I (1, 4), J (2, 3); II. G (1, 2, 6), H (2, 3, 4), K (1, 2, 3, 4, 6, 9), L (1, 2, 4, 5).

[1] Reported by a teacher of two years' experience.

3. **Solutions proposed by the teacher reporting the problem.** *a.* Present the central principles of the material in the textbook by a brief oral talk. The talk should be sufficiently interesting to hold each pupil in the class, sufficiently brief to encourage further study and discussion. The talk might run somewhat as follows for the chapter-topic on " Insects and Diseases."

You learned in studying the economic importance of insects that the people of the United States spend over $300,000,000 annually upon insects — a sum much larger than the government's expenses for education. That in itself makes us stop and think a bit about these small neighbors of ours; but there are other things much more important about insects. It was because of the bites of certain insects that the building of the Panama Canal was delayed for decades; until recently typhoid fever, carried by flies, killed several hundred citizens of Hartford every year; in some parts of the world people are afflicted with sleeping sickness caused by fly bites. Steamships entering New York harbor are quarantined because there are rats on board the vessels and fleas on board the rats, and on, or probably in, the fleas are the germs of bubonic plague. If the fleas got ashore, they might cause an epidemic much more serious than the influenza of 1918.

So you see in addition to costing money, the insects cost lives. The lives could be saved if we only knew enough about the insects. The study of insects is thus a challenge to the best minds in the country. Scientific men have responded heroically to the challenge, sometimes sacrificing their lives in the attempt to find causes and cures for the diseases caused by insects. Some have voluntarily taken the diseases so that others might study the progress of the disease.

If you wish to know more details than I have given about this subject, you may find them in the text (Chapter XII) and also in the books laid out on the table. There are still others in the library. (Well-selected references, both technical and popular, are available.)

*b.* Direct pupils to take and organize notes from their reading on such topics as:

(1) The life history of flies and mosquitoes.

(2) The various ways in which insects spread diseases.

(3) The various methods of preventing insects from spreading diseases.

*c.* Follow up the reading by best-answer tests and other forms of test to determine which pupils have not fully understood the readings upon the topics. Assign further readings to such pupils after individual explanation has been given.

*d.* Assign more intensive projects relating to the isolation and culture of special types of bacteria to the abler pupils for reading and written report.

4. **Criticism of solutions proposed.** The teacher here faces the problem of drawing the line between too much and too little explanation. From the statement of the problem it appears that any explanation that is adequate for the slow pupils tends to destroy the initiative of the faster pupils. The teacher proposes an introductory explanation that is intended to tell just enough to stimulate the curiosity of all pupils. How far the talk may accomplish this purpose can only be learned by experiment. Assuming that the talk is presented with such further remarks as are needed to hold the interest of individual pupils, it should serve to indicate the point of approach. The other suggestions have to do with the assignment of readings containing further explanation, testing to determine points on which some pupils need further explanation, and advanced projects for the superior pupils. Each of these is pertinent but none is presented in sufficient detail.

A more satisfactory solution might be reached by careful attention to *pre*testing. A diagnostic test for the unit might be constructed on the basis of what the teacher already knows about the pupils' abilities and interests in the subject. The test would contain such material as a list of essential terms to be defined, a series of questions to determine what experience the pupils have had with matters discussed in the unit, and other questions to

determine special interests that might find expression in the individual projects. (See case problem 7, solution *a*.) Explanations may also be adapted to widely differing abilities by the use of guide sheets. Guide sheets serve not merely to outline and organize ideas to be presented, but also to present ideas directly. Such a guide sheet for the unit on insects and diseases might well contain the essential facts and principles for all pupils to learn, together with special projects and reading assignments for the superior pupils. Neither group is then confused by material needed by the other group.

## F. Constructing Exercises for Classroom Study

1. **Case problem No. 10.**[1] *A class of forty-three pupils in tenth-grade American history represents a wide range of ability to comprehend and organize text material. Group discussion of the text is ineffective for the reason that the slower pupils cannot follow the remarks of faster pupils. Accordingly either the slower pupils do not take part at all, or they make remarks which are off the point. As a means of keeping discussion to the point some form of written exercise or guide sheet is necessary. The difficulty consists in constructing exercises that are useful in teaching pupils how to study the text and how to apply it independently to important social problems. (Type-difficulty II. H.)*

2. **Principles selected from Part II that apply to the problem.** II. E (1), H (2, 3, 4), K (8, 9).

3. **Solutions proposed by the teacher reporting the problem.**[2] *a*. Three types of exercise are needed. The first type should give direction and practice in organizing the text material with reference to a given topic. An example follows:

[1] Reported by a teacher of ten years' experience.

[2] See further examples and discussion of written exercises, Appendix E.

## The Crisis of Disunion

### (Repeal of the Missouri Compromise)

(1) The opening of the northern half of the Louisiana Territory to settlement, as provided by the Kansas-Nebraska Act, was prompted by the following conditions:
   (*a*) The northern half of the Louisiana Purchase was unsettled and unorganized except for Iowa and Minnesota.
   (*b*) Slavery was prohibited by the Missouri Compromise.
   (*c*) There were numerous Indian tribes in this territory.
   (*d*) California and Oregon had been settled.
   (*e*) There was a great demand for its opening in the South.

(2) The Kansas-Nebraska Act was opposed in the North on the grounds that
   (*a*) It opened up the Western territory to settlement.
   (*b*) It repealed the Missouri Compromise.
   (*c*) It was favored by the South.
   (*d*) It opened up the Missouri Territory to slavery.

(3) Senator Douglas' motives for reopening the slavery question were:
   (*a*) He believed in the principle of Popular Sovereignty.
   (*b*) He was interested in the sale of the land.
   (*c*) He didn't like the abolitionists and therefore sought to anger them.
   (*d*) He hoped to gain Southern votes for the presidency.
   (*e*) He felt the need of providing a suitable government for the people in this territory.
   (*f*) He wished to arouse some excitement.

(4) The effects of the Kansas-Nebraska Act were:
   (*a*) To create a better feeling between the North and South.
   (*b*) To increase abolitionist sentiment in the North.
   (*c*) To open up all the territories to slavery.
   (*d*) To settle the issues between the North and South.
   (*e*) To legalize the doctrines of Davis and Calhoun regarding slavery in the territories.
   (*f*) To give rise to the Republican Party.
   (*g*) To aid Douglas in his election for the presidency.
   (*h*) To hasten the settlement of Nebraska and the Dakotas.
   (*i*) To kill the Whig Party.

(5) Anti-slavery sentiment in the North was increased by:
(*a*) The fugitive-slave law of 1850.
(*b*) The increase of immigration from Northern Europe.
(*c*) The building of railroads from North to South.
(*d*) The increase in Cotton Exportation.
(*e*) "Uncle Tom's Cabin."
(*f*) The Repeal of the Missouri Compromise.
(*g*) The increased trade between North and South.
(*h*) Douglas' popularity.
(*i*) The passage of the Kansas-Nebraska Act.

The foregoing exercise is to be used in class with books open. Pupils are expected to find in the text passages relating to the various sections of the exercise; then to check the correct items in each section. After the exercise has been finished by a majority of the pupils, it is discussed, section by section. Pupils are keen to defend their judgments on each section, and the discussion is closely held to the significant points. This type of exercise does not, however, give practice in the reading skills many pupils need to develop, nor does it place sufficient emphasis upon independent thinking. The exercise does train pupils to fit ideas together and reach a fuller understanding of a general topic.

*b.* The second type of exercise is intended to develop independent thinking; for example,

What connection, if any, do you see between the slavery issue affecting the northern and southern states and the present issue between agricultural and industrial states? Why was the slavery issue more likely to split the union? List your reasons. Why is the problem of helping the farmer to find a good market more complicated than the problem of helping the southern planter to succeed? List your reasons.

This type of exercise does stimulate useful thinking, but only for a small part of the class. The exercise is likely to prove too difficult for the majority of pupils.

*c.* The third type of exercise is intended to improve ability to use reading materials efficiently. It consists of a series of competitive group drills and may be given either to the class as a whole or to special groups who are weak in particular skills. The following outline indicates the purposes for which drill exercises have been prepared.[1]

(1) To test speed and comprehension in reading the given text,

(2) To increase speed in getting the thought of typical paragraphs,

(3) To concentrate on the main purpose of the reading, on what it is all about,

(4) To visualize the details of what is read,

(5) To get accurate meanings of sentences and paragraphs,

(6) To understand the relationships between paragraphs and sections, and

(7) To summarize correctly.

Any teacher can readily construct exercises for each of these purposes. Speed and comprehension may be developed, for example, by counting the number of ideas in a given paragraph, then timing the class to see how rapidly each pupil can check all significant ideas.

4. **Criticism of solutions proposed.** The exercises as a whole are likely to meet the problem stated as directly as any other device. Furthermore, the exercises are well constructed. If properly presented and followed up, they should serve the purpose. Some important considerations in presenting and directing work upon study exercises are presented in Appendix E.

The second type of exercise is clearly too difficult for the normal tenth-grade class. Either a simpler problem should be chosen for the group as a whole, or a series of problems should

[1] Largely on the basis of J. M. Wiley's *Practice Exercises in Supervised Study and Assimilative Reading*, Iowa State Teachers College, Cedar Falls, Iowa.

be listed in order of increasing difficulty. The third type of exercise is difficult to administer in a class of forty-three members. Such drills are useful chiefly as means of motivation unless confined to individual pupils who need them most, *i.e.*, the few worst readers. The most convenient procedure is probably to give appropriate drills to the class as a whole for five minutes or so daily, until all but a few pupils have made sufficient improvement. The few needing further practice may receive it privately.

Poorly constructed written exercises tend to prevent pupils from learning units as wholes. The study exercise is likely to result in piecemeal learning unless supplemented by unit outlines or reports. The exercise is none the less highly efficient as a means of helping all pupils to understand the meaning of important parts of the unit. Study exercises should therefore be systematically combined into a logical series or supplemented by organization outlines which gather them together in proper relationships.

The use of exercises for drill purposes only is involved in the following case problem.

### G. Constructing Drill Exercises

1. **Case problem No. 11.**[1] *A large class in ninth-grade algebra contains a mixture of abilities. The work on the subtraction of monomials shows that many types of problems are missed by some pupils, though a majority of the class can solve each of the types presented. The problem consists in devising some method whereby each pupil having difficulty with one or more types of subtraction may practice upon such types until they are mastered.* (*Type-difficulty II. N.*)

2. **Principles selected from Part II that apply to the problem.** I. C (4); II. H (1, 3), P. (8); III. E (2, 5), K (1).

[1] Reported by a teacher of one year's experience.

3. **Solutions proposed by teacher reporting the problem.** *a*. To define the types of problems to be taught the outline table on the opposite page was prepared.

*b*. The examples shown for the fifty types of problem may be used as the basis for a diagnostic test when the classwork has covered each operation. By having each pupil work two or three examples of each type at a time, the teacher can determine the types on which each pupil needs more practice.

*c*. Scores may be kept for each pupil on each type of problem. Such a box score placed on the board should serve to motivate the drill.

*d*. A pupil who needs drill in a certain type of example may work a number of examples in that type till he thinks he has mastered it. The examples may be supplied by the text or by mimeographed sheets. He may then volunteer for a test. If the test is satisfactory, he then works on examples of the next type in which he is deficient.

*e*. In supervising such individual drills, the slow pupil should receive attention first. The type of practice exercise should be explained and the solution demonstrated before he proceeds with a new exercise. Pupils may be taught to listen to any individual explanation that fits their needs and to disregard explanations already understood.

*f*. Pupils who have successfully taken tests on each type of example may be allowed to do other work till the next unit is reached.

4. **Criticism of solutions proposed.** The general plan of procedure is sound. It conforms to the essential principles of drill teaching in that pupils concentrate on specific difficulties, one at a time, until each is mastered. The diagnostic table, however, appears unnecessarily cumbersome. Several of the types represent distinctions which are trivial; that is, the differences

| | Write the result of the following subtractions | | | | | |
|---|---|---|---|---|---|---|
| To define the types of problems to be taught the following outline table was prepared | Top number larger | Bottom larger | Top unity bottom larger | Bottom unity | Both equal | Both equal to unity |
| Using signs in both numbers, both positive | *1*<br>5 *ab*<br>+2 *ab* | *10*<br>+4 *xy*<br>+7 *xy* | *19*<br>+ *abc*<br>+6 *abc* | *28*<br>+8 *abc*<br>+ *abc* | *37*<br>+3 *xyz*<br>+3 *xyz* | *46*<br>+*ab*<br>+*ab* |
| Using signs in both, top positive, bottom negative | *2*<br>+5 *ab*<br>−2 *ab* | *11*<br>+4 *xy*<br>−7 *xy* | *20*<br>+ *abc*<br>−6 *abc* | *29*<br>+8 *abc*<br>− *abc* | *38*<br>+3 *xyz*<br>−3 *xyz* | *47*<br>+*ab*<br>−*ab* |
| Using signs in both, top negative, bottom positive | *3*<br>−5 *ab*<br>+2 *ab* | *12*<br>−4 *xy*<br>+7 *xy* | *21*<br>− *abc*<br>+6 *abc* | *30*<br>−8 *abc*<br>+ *abc* | *39*<br>−3 *xyz*<br>+3 *xyz* | *48*<br>−*ab*<br>+*ab* |
| Both positive, no signs used | *4*<br>5 *ab*<br>2 *ab* | *13*<br>4 *xy*<br>7 *xy* | *22*<br>*abc*<br>6 *abc* | *31*<br>8 *abc*<br>*abc* | *40*<br>3 *xyz*<br>3 *xyz* | *49*<br>*ab*<br>*ab* |
| Using signs in negative only, bottom negative | *5*<br>5 *ab*<br>−2 *ab* | *14*<br>4 *xy*<br>−7 *xy* | *23*<br>*abc*<br>−6 *abc* | *32*<br>8 *abc*<br>−*abc* | *41*<br>3 *xyz*<br>−3 *xyz* | *50*<br>*ab*<br>−*ab* |
| Using sign in negative only, top negative | *6*<br>−5 *ab*<br>2 *ab* | *15*<br>−4 *xy*<br>7 *xy* | *24*<br>−*abc*<br>6 *abc* | *33*<br>−8 *abc*<br>*abc* | *42*<br>−3 *xyz*<br>3 *xyz* | *51*<br>−*ab*<br>−*ab* |
| Both numbers negative | *7*<br>−5 *ab*<br>−2 *ab* | *16*<br>−4 *xy*<br>−7 *xy* | *25*<br>− *abc*<br>−6 *abc* | *34*<br>−8 *abc*<br>− *abc* | *43*<br>−3 *xyz*<br>−3 *xyz* | *52*<br>−*ab*<br>*ab* |
| When one number is zero | *8*<br>5 *ab*<br>0 | *17*<br>0<br>+7 *xy* | *26*<br>− *abc*<br>0 | *35*<br>0<br>*abc* | | |
| Numbers differ by one | *9*<br>+8 *ab*<br>+7 *ab* | *18*<br>−7 *ab*<br>−8 *ab* | *27*<br>+7 *xyz*<br>+8 *xyz* | *36*<br>8 *ab*<br>7 *ab* | | |

between some of the types as shown are less important than differences between hard and easy examples of the same type. This objection might easily be overcome if a list of type examples were obtained by classifying the errors in subtraction which members of the given class actually make.

The problem illustrates the value of analysis. A detailed record of the steps involved in subtracting monomials would contain all the specific activities in which pupils' difficulties arise. Such difficulties should then receive the sort of drill described for the type problems. Many difficulties in subtraction are due to the terms used in presenting the problem rather than to the problem itself. Questions like "by how much should $x$ be diminished to equal $y$?" are highly confusing. Such vocabulary difficulties should be collected and overcome by voluntary drills.

## H. Testing for Review

1. **Case problem No. 12.**[1] *A class in 9B Latin has just completed the first week of the course. The material studied includes the pronunciation of* **ī, ē, ae, v, c,** *and* **g**; *rules for gender of first declension nouns and second declension nouns in* **us,** *rules for the formation of masculine and feminine adjectives, and the meaning of the following nouns and adjectives:*

Nouns: *collis, mons, puer, filius, ager, vir, bos, equus, carus, saccus, agricola, arbor, puella, filia, fenestra, villa, casa, toga, terra, quis, quid.*

Adjectives: *altus, magnus, latus, vividis, rufus, albus, longus, pulcher, parvus.*

*The nouns and adjectives were mentioned in discussing a picture of Cincinnatus, and written on the board. The purpose of the assignment is to test pupils' retention of the specific items learned*

[1] Reported by a teacher of six years' experience.

*and also to make them coherent by a summary review.* (*Type-difficulties II. O.P.*)

2. **Principles selected from Part II that apply to the problem.** II. A (1, 5), G (5), I (2), L. (1, 2, 3, 4), N (3), O (1, 2, 3), P (1).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Review meanings and pronunciation of words on the board. Have different pupils volunteer to pronounce while all copy the list in notebooks with special attention to spelling and to the marking of long vowels. The meanings are reviewed as the words are pronounced.

*b.* For practice in fixing the pronunciation of troublesome vowels the following verse may be repeated until memorized. The verse is appropriate since it is easy enough for all to translate and since it contains the sounds studied — *i* four times, *ae* twice, and also *e, c, g, v.*

*Mīca, mīca, parva stella!*
*Mīror, quaenam sīs, tam bella!*
*Splendens eminus in illō*
*Alba velut gemma caelō*

*c.* Erase the Latin words from the board and write the English meanings instead. Have pupils write the Latin as a vocabulary test.

*d.* Give a Latin-English test upon the same words by asking for the translation of the following passage concerning the picture of Cincinnatus. The passage includes the words listed.

### Cincinnatus in Italia

*Quis est vir in picturā? Vir in picturā est Cincinnatus. Romānus est. Quid est terra? Terra est Italia. Quis est puer? Puer est Rufus. Rufus est filius, Estne Rufus in villā? Rufus nōn est in villa. Est in agrō. Ager est latus et longus. Qualis est villa? Villa est parva. Non est magna. Quīs est in casā? Fīlia in casā est. Fīlia est Julia. Julia est puella pulchra.*

*Quid est animal? Animal est bōs. Bōs laborat et agricola laborat. Quid est in colle? Arbor est in colle. Qualis est arbor? Arbor est alta. Estne mons altus in picturā? Non est mons in picturā? Collis est viridis sed humus nōn est viridis. Toga est alba, sed saccus nōn est albus.*

4. **Criticism of solutions proposed.** From the standpoint of testing, the procedures have the important merit of emphasizing the purpose for which the words are learned; namely, to use in reading Latin. The efficiency of testing depends upon the similarity between the test exercise and the practical use of the information or abilities tested. The translation exercise is thus an efficient test of the vocabulary. There are many considerations regarding tests of this character that are not recognized in the test proposed. Professional literature should accordingly be consulted in order to cover the situation more adequately. (See chapter references.)

As a review procedure, the solutions are perhaps satisfactory if the purpose is simply to present the material from a different angle. It is somewhat doubtful that the pronunciations and vocabulary will be retained on the strength of the poetry exercise and word list. It is also questionable whether the pronunciations are not better learned from the prose passage than from the poetry, this in spite of the help which the verse form gives to the ear. If the pronunciations were learned from the prose passage, the procedure might consist in oral reading of the passage until individual pronunciation became sufficiently correct for other pupils to understand and translate the Latin.

The problem here presented illustrates the importance of specifying subject matter before attempting to select teaching methods. The methods proposed are well adapted to the stated difficulty. Yet, present trends in the teaching of Latin emphasize silent reading at the start and place less emphasis upon formal drills until pupils have become familiar with the language structure.

If the formal drills upon vocabulary and pronunciation are postponed and silent reading is stressed, the procedure mentioned above would be inappropriate. The same consideration applies to each of the case problems discussed in this chapter. The subject matter is assumed to be properly selected, yet the assumption is always open to question.

### I. Procedure for Problem Solution (E)

For the definition and solution of problems in helping pupils to learn specified subject matter, the following procedure is proposed:

1. Collect specific difficulties encountered by pupils in the work of the given unit. The difficulties may be collected by observing pupils at work, by examining class papers and notebooks, and by diagnostic tests prepared for the given unit. The difficulties should involve the desired outcomes of the unit.

2. Estimate the relative frequency and importance of the difficulties in the given class. Select the more frequent and important difficulties for special treatment.

3. In many cases, of course, the pupil difficulty will immediately suggest a difficulty in teaching that needs to be solved — *e.g.*, the failure of pupils to understand the teacher's directions. When the pupils' difficulty does not sufficiently define the teacher's difficulty, consult the list of type-difficulties in Part II and note those that are most likely to remove the pupil difficulties selected.

4. Look up the principles found in the solutions proposed for the type-difficulties and note the suggestions that best apply to the given class situation.

5. Consult other teachers and texts on special method for help in evaluating and applying the suggestions obtained, — also to obtain other and more useful suggestions. Teachers of

the given subject should be asked to judge the appropriateness and practicability of the suggestions selected for use.

6. Work out specific applications of a few principles in terms of teaching methods that apply to the given subject matter, pupils, and classroom conditions.

7. Try out the methods and note the extent to which methods of different types succeed in removing the pupil difficulties. Retain the more successful methods.

8. Make use of such ready-made analyses as Procedure B (pp. 53 ff.), the "type procedure for classroom instruction" (pp. 115 ff.), and the activity lists supplied in Appendices A and B.

# CHAPTER V

## PROBLEMS IN THE ROUTINE OF CLASS MANAGEMENT

### A. Summary of Factors Involved

The present chapter is concerned with the more mechanical aspects of class management and the problems of regulating large classes. The problems discussed are related to the type-difficulties of Part II, Section III. The more personal aspects of class management are discussed in Chapter VI.

The purpose of class management is to facilitate the teacher's direction of pupils' learning activities. This purpose is served in two ways: first, by setting up various mechanical routines; and second, by developing a coöperative spirit on the part of the class. The importance of the mechanical routines depends directly upon the size of the class. It is difficult for any teacher to give proper attention to each individual, even in a small class, if the work requires much individual thinking. In classes of thirty or more, proper attention to the individual can only be approximated when routines are highly efficient. Stated positively, this means that pupils need to be taught how to work as members of the class group before they can receive full benefit from group instruction in subject matter. By routinizing certain group activities pupils learn to perform them automatically. The mechanical function of class management thus undertakes to minimize the difficulties of teaching several pupils at once.

1. **Problems defined.** Problems of class routine are best defined as obstacles to the teacher's direction of individual work. When combined with problems in discipline — as they usually are in practice — such obstacles are seldom anticipated. Successful methods are therefore more often invented on the spot than planned in advance. The teacher's ingenuity is, of course, essential in meeting difficulties of any sort. Yet more failures in teaching are ascribed to difficulties in class management than to difficulties in presenting subject matter. It is therefore important, if possible, to define a systematic approach to problems of routine management whereby solutions may be planned in advance.

A systematic approach to problems of class routine may be suggested by classifying the problems. Difficulties in directing group work during the class period will usually classify into three types; namely, (1) how to provide necessary facilities for the work of individual pupils, (2) how to direct individual work most efficiently, and (3) how to direct group work most economically so as to provide time for work with individual pupils.

*a. Providing facilities.* To provide necessary facilities in proper amount and at proper times is to avoid serious confusion and waste of time. "Facilities" include not merely text and illustrative materials and supplies, but also such items as light, heat, ventilation, arrangement of furniture, blackboard space for the teacher's own use, and other important conveniences. The need for such facilities can, of course, be anticipated.

*b. Directing individual work.* To direct individual work efficiently it is necessary to teach pupils to help themselves so far as possible. Whenever two or more pupils are in need of the same kind of direction, the direction should be supplied in such manner that all others who need it may benefit. Individual direction is thus economized by mimeographing or writing instructions

on the board, seating pupils together who have similar difficulties, using notebooks and other forms of record to make previous directions available, systematizing the correction of papers by requiring pupils to find their own mistakes as far as possible, and by other devices of like nature.

*c. Directing group work.* To direct group work economically involves efficient direction of routine. Such routines obviously must not interfere with the pupils' initiative. Yet by making the class familiar with a somewhat standardized order of business, much time is saved that would otherwise be required in repeating the same directions. Time for individual work is thus provided by standardizing the steps for each unit whenever the steps can be planned in advance, as they usually can be. When the unit covers a period of two or three weeks, it is usually possible to teach the necessary group routines within the first week at most. This leaves the remaining time free for work upon individual pupil's difficulties or for such group work as may economize the treatment of difficulties that several pupils have in common.

2. **Organization of type-difficulties.** The thirteen type-difficulties of Section III may be grouped to correspond with the foregoing outline. *Providing necessary facilities* covers two type-difficulties; namely, beginning work promptly (III. C), and providing materials (III. F). *Efficient direction of individual work* involves learning pupils' names (III. B), questioning as a means of directing the pupil's attention to important points (III. D), making (individual) assignments at proper times (III. G), use of notebooks to record previous directions (III. J), and the correction of pupils' papers (III. M). *Economical direction of group work* involves the teacher's use of clear English in giving group directions (III. A), directing individual work expeditiously (III. E), improving pupils' English to prevent rambling discussions (III. H), systematizing the preparation and presenta-

tion of oral reports (III. I), preparing and conducting tests to reveal points requiring further group instruction (III. K), and marking papers and oral exercises to discover the pupils who most need individual attention.

3. **Analysis of difficulties in routine management.** Like those of other sections, the type-difficulties as listed cannot be solved adequately until reduced to more specific terms. To anticipate a difficulty in providing materials is of no use to the teacher until it is known what particular materials will be needed. For this reason it is necessary for the given teacher to locate the specific activities in which difficulties may arise before useful solutions can be planned in advance.

As in the preceding chapter, it is necessary to determine, if possible, not merely the teacher's activities but also the pupils' activities that are involved. It is usually possible to select certain important pupil activities for which routines may be established at the outset, such as seating, attendance taking, and use of collateral reading in class. Certain of the teacher's activities in management may then be selected and standardized in the same way; for example, the selection of pupils to perform special duties, making announcements, communicating with parents, checking pupils' excuses, and deciding the order in which pupils are best helped individually.

Appendices C and D [1] contain lists of activities involved in class management that may be used as check lists in selecting activities to be standardized. The lists by no means represent a complete analysis as they stand. Yet by restating the activities in terms of a particular class, the teacher may often analyze the factors of class management more easily than by making his own analysis.

[1] Selected by data supplied by the Commonwealth Fund Study of Teacher Training Curricula, by courtesy of W. W. Charters, Director of the Study.

4. **Use of the check lists.** To standardize in advance the method of conducting important group activities is often the most efficient means of preventing or solving the problems of class management. When the basic activities in class management are properly routinized, the major teaching difficulties tend to disappear. In directing individual work, for example, the teacher may relieve the problem considerably by routinizing activities such as the methods by which pupils indicate their need for help, the order in which pupils come to the teacher's desk, and the procedure to be followed by pupils in finding and solving their own difficulties. Any problem in management is simplified by selecting the pupil activities involved, planning an efficient procedure for all pupils to follow, and then teaching this procedure as a routine.

Some difficulties in class management will arise, of course, in spite of efficient routine — as, for example, the difficulties of attending to individual work in large classes when pupils' needs are widely varied. Solutions for such problems cannot be routinized. Solutions can, however, be approximated and then adapted to particular situations as they arise. An analysis of the teacher's activities in managing the class often helps greatly in working out the approximate solutions.

5. **Case problems.** The case problems selected for discussion include the more significant difficulties in the routine of class management. Each problem necessarily involves also certain difficulties of instruction that have already been discussed in Chapter IV. Since the function of management is to facilitate teaching, the problems here considered are in a sense preliminary to the problems discussed in earlier chapters. For this reason the solutions reported by teachers are in some cases abbreviated. Solutions that apply less to difficulties in management as such than to difficulties of instruction are sometimes omitted.

It will be noted that nearly all of the solutions are too general for immediate application. Because the details of any routine procedure must depend upon conditions peculiar to the given class, it is often impossible to present such details without obscuring the principles that apply to *any* class. The solutions proposed for the problems of this chapter are accordingly less detailed than the solutions found in the preceding chapters.

## B. Beginning Classwork Promptly

1. **Case problem No. 13.**[1] *A ninth-grade class in beginning algebra is at work on the unit of algebraic evaluation* — i.e., *translation of verbal problems into algebraic symbols to show the functional relationships existing between various elements of the problem stated. Since some pupils are "self-starters" and others are not, there is serious difficulty in beginning the work of the period promptly. The work is organized on the supervised study plan and is presented in the form of problems to be worked by each pupil at his own best rate of speed. This involves the additional problems of directing different groups engaged with different examples at the same time and of giving slow pupils all the help they need without loss to the faster pupils.* (*Type-difficulty III. C.*)

2. **Principles selected from Part II that apply to the problem.** III. C (1, 3), E (1, 2, 3, 4, 5).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Prepare and bring to class the following materials:

(1) A list of directions (preferably worked out with the class beforehand) which indicate the steps to be followed in solving problems of the types to be worked during the period. The directions should be entirely specific and should cover all matters of form, checking of results, and other routine procedures. It is well for the directions to contain a written statement of the pro-

[1] Reported by a teacher of three years' experience.

cedure to be followed in requesting help — for example, "Stand by your seat or raise your hand till the teacher sees you; then sit down and check over your work with the directions until you can answer your own question or until the teacher comes to you or calls you to the desk."

(2) Model solutions of the different types of problems to which the directions apply. Each step in the model solutions may be numbered to correspond with the steps in the list of directions.

(3) A mimeographed list of the problems to be worked during the period, together with additional problems or new types of problems to be held in reserve for pupils who complete the required work. If satisfactory problems are contained in the text, page references are sufficient.

(4) A list of specimen problems to be used as a brief warming-up exercise or test on the work of the preceding period.

*b.* Dictate the examples of the warming-up test and allow the class five minutes to work them.

*c.* Select such of the materials as apply to the work of the period and ask different pupils who can write legibly to place them on the board. If the teacher has exclusive use of the room, such items as (1) and (2) will naturally remain on the board till the unit is completed, or longer. Distribute problems to be worked or place text references on the board.

*d.* Ask for questions on the problems. When these have been answered, direct pupils to begin work. Allow a minute or two for pupils to find places, arrange papers, and read the directions.

*e.* Pass immediately to such pupils as seem unable to get their minds on a problem. Ask them why they do not apply the first step. Offer any suggestions needed to get the work under way.

*f.* Pass about the class, noting the work of weaker pupils especially. If the papers indicate a general confusion or common error, interrupt the work and explain the point in terms of the

directions on the board. Modify the directions whenever they can be improved in clearness or simplicity. Add supplementary steps wherever possible without risk of confusing the slower pupils who depend upon the directions most. Teach the class to listen to any useful explanation, no matter to whom it may be addressed.

4. **Criticism of solutions proposed.** The proposed solutions apply to formal subjects like mathematics in which numerous problems involving the same principles are easily provided. In content subjects the same principles apply with modifications. It is essential that the unit have a definite purpose which pupils understand and toward which *most* pupils can work independently. The teacher's oral presentation, guide sheets, and reading assignments make the purpose explicit. Guide sheets, exercises, supplementary problems for the class, supplementary projects for individuals, unit reports, and directions for study — all help to indicate how the purpose can be achieved. Such directions permit most pupils to begin work promptly whenever the period is given over to study. The teacher may thus attend to the few pupils who have met obstacles and to such other pupils as may need to be shown how to work more efficiently.

## C. Providing Materials

1. **Case problem No. 14.**[1] *The members of a tenth-grade class in vocational agriculture are studying the unit "soil fertility." Because of the variety of first-hand experiences with the growing of any single crop, it is difficult to make concrete the presentation of a topic such as — "how the nitrogen content of the soil is increased by the growing of alfalfa." To make the presentation clear it is necessary to select and organize an abundance of illustrative material.* (*Type-difficulty III. F.*)

[1] Reported by a teacher of six years' experience.

2. **Principles selected from Part II that apply to the problem.** III. D (3), F (3, 7), G (1, 4), I (1, 2, 4, 5), K (1, 7).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Secure and have on hand the following materials: (1) several samples of alfalfa roots with nodules, (2) mounted specimens of nitrifying bacteria taken from nodules, (3) compound microscope, (4) pictures of growing corn and potatoes on land where alfalfa has been previously grown and on land where alfalfa has not been grown, (5) diagram comparing food content of alfalfa plant with other common forage plants grown in the locality, (6) diagram comparing the analysis of manure before and after feeding alfalfa to livestock, (7) diagram comparing food content of alfalfa roots with food content of roots of other common forages, (8) diagram illustrating the nitrogen cycle, (9) textbooks, reference books, and farm station bulletins.

*b.* Distribute alfalfa plants to pupils, one plant to each two pupils. Direct attention to nodules by questioning.

*c.* Have each pupil examine mounted specimens of bacteria through the microscope and make a drawing to show what he sees. Review effects of nitrogen upon vegetative growth, which has previously been taught.

*d.* Emphasize the point showing pictures of corn and potatoes before and after alfalfa was grown on same land.

*e.* Combine the various elements by means of the diagram of the nitrogen cycle. Show how the plant, the soil, the bacteria, the air, and farm animals are related.

*f.* Show the diagram of manure analysis to explain the value of manure as fertilizer; also stress the importance of proper drainage in growing alfalfa.

*g.* Test the points covered.

*h.* Assign the following problems for study and report based upon the illustrations and reading references: (1) how and why

do alfalfa root nodules contain bacteria? (2) how do the bacteria live? (3) how do the bacteria affect the growing plant? (4) how do the bacteria find their way into the soil?

4. **Criticism of solutions proposed.** The solutions should prove effective in the situation described. The method of selecting illustrations applies also to other subjects. The teacher follows through the steps in the explanation of a given principle and collects the best illustrations available for each step not otherwise clear. For academic subjects an excellent plan is to collect specimens of pupils' work to illustrate both good and bad treatments of the point under discussion. It is important to note that confusion is frequently caused by over-illustration. The illustrations should be chosen to fit the plan of presentation, not vice versa. When material is introduced to fit illustrations that happen to be on hand, the effect is often to destroy the pupils' perspective of the unit.

## D. Learning Pupils' Names

1. **Case problem No. 15.**[1] *The building, which houses eight grades, is badly crowded. The seventh and eighth grades constitute the junior high school. Each teacher has a heavy pupil load. Some semesters the average number of pupils taught per teacher per week is 275. To learn the names of these pupils is no easy task. The difficulty is serious in the class in English composition where the pupils' incidental speech errors should be identified at the start. Attendance taking is also a serious difficulty for the same reason.* (*Type-difficulty III. B.*)

2. **Principles selected from Part II that apply to the problem.** III. B (1, 2, 3, 4).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Assign each pupil a seat number. Record numbers after each

[1] Reported by a teacher of nine years' experience.

name on roll book, seating plan, and registration cards. The association of name, number, face, and location of desk helps to fix the name.

*b.* Take two or three minutes at some appropriate time during each period to practice the recall of pupils' names until all have been learned. Do this by running the eye down each row of pupils and checking off the names on the list that are not known.

*c.* Check attendance by noting vacant seats until the names have been learned; thereafter appoint the first pupils in each row as monitors to report the absences in each row.

4. **Criticism of solutions proposed.** The solutions appear to be adequate. In such classes it is advisable to schedule five-minute private conferences with each pupil as early in the course as possible. This permits the teacher to identify the pupil's name with information concerning his preparation, attitude toward the course, scholastic ambitions, and other important items. Such conferences are essential to efficient teaching.

## E. Directing Use of Notebook

1. **Case problem No. 16.**[1] *The requirement that pupils keep notebooks is traditional in the history department. Credit is given or withheld at the end of each course to a large extent on the basis of the completeness (and neatness) of the pupil's notebook. The requirement has become formalized to the point where the notebook is "kept" with little or no advantage to the pupil, and the preparation of a satisfactory notebook requires considerable time from both pupil and teacher. The problem is to determine legitimate purposes for keeping notebooks, if any, and the best methods of accomplishing such purposes.* (*Type-difficulty* III. J.)

2. **Principles selected from Part II that apply to the problem.** III. F (1, 3, 5), J (1, 2, 3, 4, 5, 6), M (1, 2, 3, 4, 5, 6).

[1] Reported by a teacher of two years' experience.

3. **Solutions proposed by the teacher reporting the difficulty.** *a*. Require the use of notebooks for two purposes only; namely, (1) for filing sheets distributed by the teacher in multigraphed form, pupil's tests, reports, and other papers returned by the teacher; also (2) for filing original questions, clippings, and other material so that they may be available for use in connection with appropriate units.

*b*. Draw up an explicit statement of the purpose of the notebook, directions for preparing it, and reasons for the directions. The purposes, directions, and reasons should be multigraphed so that each pupil may paste or attach them in the notebook.

*c*. Examine notebooks at the close of each unit and make a list of important points to be discussed with the class. The list should contain both inefficiencies and good points found in the notebooks of representative pupils. This saves the time required to write comments in each notebook. The inefficiencies may then be taken up with the class as a whole and the period given over to their correction by the pupils concerned. Such points for correction will include irrelevant material, clumsy arrangement of material, incorrect statements, and the like. Better methods of arranging and noting material should be explained and illustrated by the better notebooks.

*d*. Demonstrate the use of a well-prepared body of notes in preparing unit reports and in applying previous discussions to new material. Emphasize the fact that only useful material is to be recorded and that the recorded material should be used.

*e*. Encourage initiative in collecting material related to any unit or topic of the course. This is best done by indexing certain pages of the notebook to correspond with the outline of the course as a whole. Entries may then be made under appropriate headings for use at some future time when the advance units are reached.

4. **Criticism of solutions proposed.** The foregoing solutions make little or no provision for teaching pupils to take useful notes on reading as an art worth acquiring in itself. They must be taught to select, to relate, and to summarize materials read. They must be prevented from mere copying. Exercises to this end should consist in having the class read through a paragraph, close the book, and note the main thought, briefly and clearly. Such notes may then be compared with the original. Collateral readings should then be noted in this way and the notes should be read and criticized by the teacher with constructive comment.

## F. Inspecting Seat Work

1. **Case problem No. 17.**[1] *Tenth-grade geometry is taught by a procedure that obliges pupils to work out different parts of a given theorem at their desks, following the teacher's explanation of the theorem as a whole. When the class fully understands the theorem, corollary theorems and originals involving the same relationships are then solved individually. The teacher must inspect the work of each pupil to note the points that several pupils do not understand and that accordingly require group explanation. This inspection involves the major difficulty of "getting around the class" to give adequate explanation of individual difficulties that cannot well be cleared up by any group explanation. Three minor difficulties are involved, namely, (a) pupils are idle while waiting for the teacher's help, (b) pupils are idle who have finished the work and are waiting for further assignments, and (c) pupils waste time who follow a false lead and who need to be set on the right track to prevent waste of time. (Type-difficulty III. E.)*

[1] Reported by a teacher of ten years' experience.

2. **Principles selected from Part II that apply to the problem.** II. H (1, 2, 3, 4), K (8); III. E (1, 2, 5), F (4), M (1, 3, 5); IV. B (2, 4), C (6); V. G (4).

3. **Solutions proposed by the teacher reporting the problem.** *a*. Take sufficient pains to anticipate all the materials needed or useful in the work of the period and multigraph a sufficient supply of each. The materials needed for each period are a sufficient number of exercises and work problems to keep the most rapid workers busy during the entire period,[1] direction sheets for pupils' guidance in solving the problems, and illustrative material for the teacher's use in explaining new work. The direction sheets should describe methods of study and may well be written on the board. Methods of attacking the problems should be demonstrated before the work begins.

*b*. Prepare a model of the form to be employed in all written work. Teach this form to the class and require pupils to use it in order to make the checking of pupils' seat work easier.

*c*. Whenever it is known that certain pupils may have serious difficulty with certain problems, tell the pupils to omit such problems until they have been further explained.

*d*. Encourage other pupils to pay attention to explanations given to individual pupils whenever the explanation is of sufficient interest to them, not otherwise. Group pupils together who have met or who are likely to meet the same kinds of difficulty in the work.

*e*. Ask for a show of hands by pupils who understand the step in the proof that has just been covered. Group together the pupils who fail to understand and supply further explanation or suggestion when these pupils are a minority. Otherwise re-explain to the class as a whole.

[1] See Appendix E.

*f.* Train pupils systematically to find errors in their own work by checking each step against the direction sheets.

4. **Criticism of solutions proposed.** The solutions represent the more important routines that need to be taught in order to simplify the supervision of seat work by keeping pupils busy. Further suggestions may be found in the criticism of case problem No. 13. Pupils who waste time by following a false lead may often be identified by inspecting the work of the two or three pupils most likely to go astray. When mistakes have been discovered, the mistakes may be called to the attention of the class as a whole, by way of warning others who may be making the same mistakes.

## G. Conducting Oral Reports

1. **Case problem No. 18.**[1] *A ninth-grade class in American history contains fifty-two pupils. Roughly, one third of the class are of foreign parentage and demand special attention to English. Some type of oral work is important both to increase the amount of practice in correct speech and also as a means of relating the history to current events and other familiar experience. The problem consists in so regulating the reports as to make them less of a perfunctory chore and more of a give-and-take between the reporter and the class audience.* (*Type-difficulty III. I.*)

2. **Principles selected from Part II that apply to the problem.** II. D (2), F (1, 2, 3, 4, 5, 6); III. I (1, 2, 3, 4, 5), L (1, 11).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Assign reports according to the pupil's ability to present particular topics that are both interesting and useful to the class, or according to special needs for practice in speech. Pupils who need practice in speech should not be required to give oral reports until they have found something worth reporting.

[1] Reported by a teacher of seven years' experience.

*b.* Pupils' special interests and hobbies may appropriately be reported upon whenever such interests have a useful bearing on the course. Useful interests may be discovered by conferring with the pupil and by interviewing other teachers, parents, and classmates.

*c.* Teach the class to regard each report as to some extent a coöperative enterprise. Let the class vote occasionally on the topics to be reported on; encourage suggestions as to how the topic should be developed. A plan of the talk may then be sketched on the basis of the class discussion. The effect is to make the class better able to criticize the report when presented.

*d.* Examine the pupil's abstract or outline of the report in advance whenever the report requires an outline. When time serves talk over each report before it is prepared in order to encourage adequate preparation. Oral reports in the ninth grade, however, should be brief and frequent rather than laborious and infrequent. Give practice drills in paraphrasing where necessary to keep pupils from merely copying and memorizing references.

*e.* Allow designated groups of pupils to collaborate in reporting upon a given topic, — by dividing it into sub-topics to be covered by different pupils.

*f.* Have the substance of the report outlined on the board occasionally to help the class in criticizing the organization of material. Supply whatever comment is needed to relate the report clearly to some phase of the unit studied. Encourage each pupil to formulate at least one question upon the announced subject of the report and to write it out before the report is given. The teacher may collect the questions and select certain ones for the reporter to answer after he has made his report. Other questions should be encouraged from the class audience directly. Pupils should be taught how to listen to reports so that they can follow the speaker's argument.

*g.* Give occasional brief tests to the class as a whole upon the substance of the report. This improves attention. Pupils should not, however, be required to pay close attention to an unsatisfactory report — beyond the limits of common civility.

*h.* Well-prepared reports should be encouraged by the questions asked by the class. Satisfactory attention on the part of the class should be encouraged by questions asked by the pupil reporting. The reporter should be expected to prepare such questions for all reports of more than three or four minutes. Sufficient time should be given for the class to answer them. The teacher should ask the questions until the class learns to take them seriously.

4. **Criticism of solutions proposed.** The solutions summarize important matters to be regulated or routinized; they do not present the specific regulations themselves. As a summary they appear adequate. Several suggestions, however, are taken from Part II without the modifications necessary to adapt them to the conditions of the given grade and class.

Two items of some importance are not treated in the foregoing solutions; namely, the selection of historical topics for reports and the regulation of pupils' note-taking. Generally speaking, pupils should not be asked to present the more important topics of the unit. Such topics the teacher needs to present himself as effectively as possible. A pupil's report may frequently interfere with the teacher's presentation and cause serious confusion for the class.

Notes should seldom be required except for two purposes, — to record statements made by the reporter that the pupil wishes to ask about later, and to obtain practice in note-taking. It is often a useful exercise in note-taking to have all pupils take notes on a short pupil report and then compare them for clearness, completeness, and organization. Information needed for

the work of the unit should be supplied by the reference books themselves or by mimeographed sheets. Pupils' reports are not efficient means of conveying information. They are useful in developing critical attitudes and stimulating thought.

With obviously necessary adjustments to different types of material, the procedures contained in the foregoing solutions may well be standardized in any high-school course where oral reports are useful. How to report needs to be taught as systematically as the subject matter reported upon.

## H. Questioning

1. **Case Problem No. 19.**[1] *It has been customary to direct the work in ninth-grade general science by means of oral questioning. A given principle, for example, the lift-pump, is developed by pupils' replies to questions. The class is then referred to textbook readings out of class for fuller explanations and illustrations. The difficulty with this procedure lies in the loss of class time for the pupils who do not volunteer to answer the questions and who are not asked to answer them. It would be desirable to routinize the questioning so that all pupils would have to think out answers to all questions while the teacher is present to explain any points not clear.* (*Type-difficulty III. D.*)

2. **Principles selected from Part II that apply to the problem.** II. K (1, 2, 3, 5, 6, 7, 8, 9); III. D (2, 3), E (2, 4, 5); IV. B (2, 3, 4, 7).

3. **Procedures proposed by teacher reporting the problem.** *a*. Prepare a few directive and thought-provoking questions that may be placed on the board in clear view of the class. For the study of the lift-pump [2] the following procedure might serve. The title of the unit is "How our water supply is obtained and

[1] Reported by a teacher of one year's experience.

[2] Suggestions obtained from *School Review* XXXII: 175–181 (1924).

distributed." Pupils are given a brief demonstration and description of the lift-pump, then asked to prepare careful answers to certain questions with the aid of the text. The teacher checks the work and answers individual questions for the benefit of the class as a whole. The questions are: (1) Make diagrams showing the lift-pump in four different periods of operation (do not copy from text — examine the pump itself); (2) What is accomplished by the first up-stroke of the piston? (3) By the down-stroke? (4) By the second up-stroke? (5) By the second down-stroke? (6) Explain the position of the valves in each of the four stages.

*b.* Answer the questions briefly, allowing each pupil to mark his own paper as follows: x — incorrect; inc. — incomplete; o.q. — off the question; n.c. — not clear. Then have papers exchanged and the corrections checked by another pupil.

*c.* Throw the questions open for discussion by pupils who have made errors. Papers should be corrected by marginal notes, then filed in loose-leaf binders.

*d.* Record the various types of errors made and develop gradually a series of corrective exercises for errors of each type. The exercises may then be handed to pupils on mimeographed sheets for special practice,[1] for example: (1) failure to understand the question; — have the pupil restate the question and demonstrate the value of the habit in making the question clear, (2) ignorance of the method to use in finding the answer; — have the pupil restate the question, then ask himself "What do I have to know in order to answer the question?" (3) tendency to memorize rather than interpret the text; — construct problem tests or exercises that require reflective thinking,[2] (4) inability to distinguish between major and minor points; — construct exercises in outlining, abstracting, and summarizing selected pages or

[1] See case problem No. 10. [2] See Appendix E.

chapters of the text, (5) failure to interpret diagrams, tables, and illustrations correctly; construct exercises in making diagrams and tables, also in selecting the correct interpretation from a list of incorrect interpretations. Construct other exercises for errors of significant frequency.

*e.* Standardize a set of "directions for study" on the basis of such errors as the foregoing. Refer to the directions specifically when explaining methods of attacking new problems. Interrupt study wherever necessary to demonstrate more efficient methods of work.

*f.* Omit group discussions wherever possible unless pupils are prepared to report on work carefully done or have problems to raise. Do not ask oral questions of the class at large. Confine oral questioning to individuals who are engaged in the study of specific material that they cannot interpret correctly. Avoid "recitations" except when certain pupils have matters of interest to present that the class as a whole cannot obtain so well from reading or when floor talks help a pupil to organize his own ideas.

4. **Criticism of solutions proposed.** The solutions have the merit of discouraging unsystematic questioning whenever the group can be more economically directed by intelligently standardized forms. While the suggestions are general, they apply well to any subject as far as they go. Specific applications need to be made in terms of each class.

The suggestion that all group questioning may be standardized, of course goes too far. There is always a place for the abrupt question that indicates a new point of attack, reveals a hidden implication, or recalls a wandering class to the work at hand. Such questioning is class management pure and simple. Its value as a supplement to routine procedures is entirely obvious. Group questioning, however, tends to discourage individual learning.

## I. Improving Pupils' English

1. **Case problem No. 20.**[1] *The progress and morale of a tenth-grade class in domestic science are both affected by pupils' use of slovenly English. Not merely is written work unorganized and careless, but pupils' indifference to correct usage in speech makes clear thinking very difficult to secure from pupils of real ability. The problem consists in setting up controls that will encourage more careful expression without requiring too much of the teacher's time.* (*Type-difficulty III. H.*)

2. **Principles selected from Part II that apply to the problem.** II. G (7); III. H (1, 3, 5); IV. F (2, 3).

3. **Solutions proposed by teacher reporting the problem.** *a.* Confer with the department of English and persuade other departments, if possible, to assume responsibility for certain specified types of English instruction under the general direction of the English department or principal. Such matters as clearness of organization, use of correct idiom, neatness, paragraphing, and vocabulary are matters of equal concern to all departments.

*b.* Collect pupils' English errors systematically and refer them to the English department for two purposes: first, to serve as practice material in English classes; and, second, to obtain suggestions from English teachers as to efficient methods of correcting the errors in domestic science classes. The English department should be asked to indicate the errors that may properly be ascribed to carelessness rather than to ignorance of the proper usage.

*c.* Refuse to accept statements, whether oral or written, that are carelessly phrased. Require pupils to find and correct significant errors themselves wherever possible.

[1] Reported by a teacher of one year's experience.

*d*. When ideas are poorly expressed for lack of vocabulary, write the correct terms in a conspicuous place on the board and teach the terms whenever there is occasion to use them.

*e*. Do not interrupt a pupil's thinking by criticizing his English when the effect of such criticism is to make the pupil self-conscious and inhibit his thinking. Wait until he has finished his statement or paper, then reject it if the English is slovenly.

*f*. Record on a cross-section sheet the glaring errors made by each pupil for the period of a week or so. Insist on the systematic elimination of such errors by the end of the course.

*g*. Take sufficient pains to demonstrate and explain the "why" of good English. Allow for differences in home backgrounds. Stress clearness and forcefulness in speech rather than any sort of literary usage.

4. **Criticism of solutions proposed.** The solutions are taken almost literally from Part II. They are consequently principles to be applied rather than routine for the elimination of bad English. Routines, however, are suggested, for example — *a*. Record for a week or two the more serious errors in English and test the class regularly by asking each pupil to correct the errors in writing. *b*. Use symbols to indicate specific types of errors that must be corrected before the paper can be accepted; *c*. prepare or secure from the English department a series of short practice exercises applying to the typical errors made and systematically assign appropriate exercises to pupils who fail to detect errors of a given type; and *d*. use pupil monitors for the purpose of making the class observant and critical of errors in oral English. Other convenient and useful routines should be suggested by the specific errors made, by the age and interests of the given pupils, and by the subject matter of the course.

The only satisfactory solution for the problem of slovenly English is suggested in the first of the procedures listed; namely,

a responsibility for English teaching that is felt and exercised by each teacher in the school. Systematic training in English usage should be required of deficient pupils. Such training must be given by the teachers concerned if no "hospital" course in usage is offered by the English department.

## J. Testing

1. **Case problem No. 21.**[1] *The beginning Latin class in a suburban high school contains thirty-five pupils. The teacher's primary object is to teach pupils to read Latin intelligently rather than merely to substitute English words for Latin equivalents. One serious obstacle is the lack of a sufficient variety of reading material adapted to beginning classes. The major problem, however, consists in locating the specific difficulties and deficiencies that prevent pupils from reading Latin for the meaning rather than for the words. An efficient system of testing seems to be a necessary part of the class routine.* (*Type-difficulty III. K.*)

2. **Principles selected from Part II that apply to the problem.** II. A (2, 5), G (2), O (3, 6), P (1, 2, 3, 4, 5, 6, 7, 8); III. C (1, 3), D (1), F (2), K (1, 2, 3, 4, 5); IV. B (5), E (1); V. G (2, 4).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Collect the major difficulties met by pupils in reading Latin and classify them by types. Construct several short answer tests that apply to each type of difficulty, for example:

(1) To test information concerning Roman history, mythology, and customs that is necessary in understanding the text — The hero who held the Etruscans at the bridge was Caesar—Hannibal — Camillus — Horatius — Brutus. (Other examples omitted.)

(2) To test comprehension of the Latin passage —

(*a*) A simple narrative paragraph in Latin followed by about ten easy questions in Latin, each of which may be answered by a

[1] Reported by a teacher of two years' experience.

word or two from the paragraph; (*b*) true and false statements about the paragraph written in Latin for pupils to check; (*c*) best answer tests consisting of an English sentence followed by a series of Latin translations, all in correct Latin but only one properly expressing the idea of the English sentence. Pupils check the correct translation.

(3) To check difficulties in composition and syntax the Godsey Latin composition test may serve as a basis for other tests of the same nature. A similar use can be made of the White and Henmon Latin tests in respect to vocabulary and translation.

*b*. Prepare practice exercises consisting of somewhat simpler material and corresponding to the tests of each type. Give the tests in rotation, one type each week or oftener. Allow pupils who make a poor showing on a test to work on the practice exercises and then volunteer for a second test. Base class work upon the same kind of practice material. Group pupils according to their deficiencies, insofar as possible, and allow each group to work on material most needed at the time, as indicated by the tests.

4. **Criticism of solutions proposed.** The solutions lead in the right direction. They should be improved by the application of principles selected from Part II but not represented in the foregoing list. The procedure as a whole is likely to require more time for the construction of efficient tests and exercises than most teachers can afford. It is also extremely difficult to supply sufficient guidance to a beginning class in a new subject by means of mimeographed exercises. The exercises are none the less useful in providing concrete illustrations of difficulties to be overcome.

A less cumbersome and more efficient procedure might be routinized by basing the class work for periods of two or three days upon rapid silent reading of easy Latin. Pupils may be directed to outline the main thought in their own words and to

underscore words and forms not understood. When a majority of the class has finished the reading, the meanings may be explained and the underscored difficulties may be systematically taught.

As applied to other subjects, pupils should become accustomed to tests that emphasize the most useful applications of the subject matter and the most efficient method of learning it. Such tests should be given at regular and frequent intervals, and followed by corrective instruction based upon the individual deficiencies revealed. To routinize testing beyond this point is likely to defeat the purpose of diagnosing genuine difficulties in learning the subject matter itself.

## K. Correcting Papers

1. **Case problem No. 22.**[1] *A class in ninth-grade English composition contains forty-seven pupils. It is customary to require from three to five pages of written work from each pupil each week. The problem consists in making comments on the papers that will benefit each pupil and that will not require an undue amount of the teacher's time and energy.* (*Type-difficulty III. M.*)

2. **Principles selected from Part II that apply to the problem.** III. M (1, 2, 3, 4, 5, 6.)

3. **Solutions proposed by the teacher reporting the problem.**

*a.* At the outset of the course indicate the existence of all errors in each paper by a check in the margin opposite the line in which the error occurs. Where more than one error is made in one line, write the number of errors instead of the check.

*b.* Give the pupil as much credit for detecting errors in his own work as for correcting them. When a pupil makes a mistake in his first draft and underscores it, count it correct. By this and other incentives try to develop the pupil's ability to catch the more serious errors in the re-reading of his paper.

[1] Reported by a teacher of seven years' experience.

*c.* Record the more frequent mistakes made by the class during the first few weeks. Teach methods of detecting and correcting the errors to the class as a whole.

*d.* After pupils have become sufficiently critical to find the more glaring errors, check the margin only for mistakes of the particular kind that the exercise is concerned with. Other errors should be noted when they seem likely to become habitual.

*e.* Require all papers to be corrected by pupils as a fixed routine. The teacher should correct only such mistakes as the pupil has tried in vain to correct after the mistake has been indicated. The teacher's comments should be written in longhand for only such time as it takes pupils to learn a simple set of symbols — *e.g.*, cl — clarify; p — correct the punctuation; sp — misspelled, and the like. Thereafter the symbols alone may be used.

*f.* All papers containing many careless mistakes should automatically be returned for rewriting.

*g.* Only such written work should be required as is needed to teach a particular skill or principle. Writing merely for the sake of writing so much per week should be discontinued.

4. **Criticism of solutions proposed.** The suggestions are taken from the one section of Part II with slight modification. Other principles indicated by the cross-references are no less pertinent than the principles selected.

The procedures should prove successful if specific applications to the given class are based on a careful diagnosis of the pupils' significant difficulties. It is difficult to teach pupils to find and correct merely formal errors that are not considered important. When a coöperative attitude is developed, the suggested procedures should apply to the systematic improvement of written English in any subject.

## L. Procedure for Problem Solution (F)

For the solution of problems in routine class management, the following procedure is proposed:

1. Make a list of the more frequent and important routine pupil activities in the work of the given course (consult the list in Appendices B and D) and train the class to perform such activities by systematic instruction.

2. Anticipate and note as many as possible of the specific conditions or situations that are likely to interfere with any of the pupils' activities listed, for example

*a.* Lack of necessary facilities.

*b.* Physical disturbances of noise, temperature, uncomfortable seats, talkative and indifferent "neighbors," and the like.

*c.* Pupils' uncertainty regarding the work to be done or the best method of doing it.

*d.* The teacher's inefficient methods of giving individual help or lack of time to give sufficient attention to each pupil, and

*e.* Pupil's inability to pay attention, to use books, to take notes, to follow directions, to find material, to locate errors, and to perform other study activities required.

3. Collect methods by which the teacher may remove such conditions or situations with the pupils' help. Methods may be obtained from suggestions found in Part II and by *a.* consulting other teachers, *b.* analyzing successful class routines, *c.* reading, and *d.* experiment.

4. Select the more efficient methods experimentally.

5. Plan a systematic class procedure which includes the selected methods.

6. Present the procedure as simply as possible in the form of regulations or rules that pupils may be taught to follow as a matter of routine. Motivate the observance of the rules by

explaining the reasons for them and by encouraging pupils to simplify or improve them.

7. Direct pupils' attention to the importance of learning how to work efficiently as a group, by frequent exercises and tests in such matters as listening to directions, following directions, finding answers to questions independently, working in committee, and other routine activities.

8. Give special instruction to the few pupils who fail to take class routine seriously. Demonstrate the connection between the routines of the schoolroom and the routines of a business office or well-regulated household. Have such pupils practice on important study routines one at a time until they are mastered.

# CHAPTER VI

## PROBLEMS IN SECURING PUPILS' COÖPERATION

### A. Summary of Factors Involved

A teacher's success in securing coöperation depends perhaps as much upon what the teacher *is* as upon what the teacher *does*. In the preceding chapters, it has been taken for granted that a satisfactory degree of coöperation has been developed. Selection of subject matter, direction of learning, and mechanics of class management necessarily involve the problem of developing proper attitudes. No teaching procedures are proof against the teacher's ill-humor or the pupils' unwillingness to coöperate. The present chapter, therefore, deals with these subjective factors more directly. Its purpose is to make explicit certain means of controlling pupils' attitudes that may be applied to the class as a whole. Methods of securing the coöperation of individual pupils are discussed in Chapter VII.

The type-difficulties of Part II, Section IV, with which the chapter deals, represent classroom situations in which problems of motivation are conspicuous. The first type-difficulty — " establishing a coöperative attitude " — is as broad as motivation itself. " Holding attention " and " developing initiative " are only slightly less general. Hence, in order to be explicit in describing methods of meeting such situations, one would have to analyze the situations in the same way that the problems of preceding chapters have been analyzed. Yet, analysis of methods for controlling attitudes is very likely to defeat its own purpose.

One cannot safely analyze methods of expressing or developing attitudes beyond a certain point. The elements into which the methods are analyzed become meaningless in themselves, like the separate pages of a book or the petals of a flower. The abstracted elements of "an effective teaching personality" are mere fragments that have no charm until restored to their original pattern. It is here particularly important to take the whole situation into account.

The other seven type-difficulties of Section IV are more tangible. Each represents a teaching problem containing important subjective elements, to be sure. The problems, however, respond to procedures that are no less objective than those described in previous chapters.

1. **Procedures involved in developing coöperative attitudes.** To come at the subjective elements more directly, it will be useful to summarize the principles involved in developing coöperative attitudes on the part of the class as a whole. It will be noted that the principles apply to all other types of problems as well, for the reason that the development of proper attitudes is involved in any teaching situation. It should also be noted that two essential factors in developing desirable attitudes are treated separately in the chapters to follow; namely, the treatment of individual pupils (Chapter VII) and the improvement of the teacher's personal traits (Chapter VIII). These two factors accordingly receive less emphasis in the following discussion than their importance deserves.

*a. Exhibiting useful teaching traits.* Methods whereby the teacher may improve his teaching personality depend for success upon his earnestness of purpose, opportunities for contacts with stimulating people, and many other conditions that cannot always be assumed. Yet the importance of the teacher's personality in developing pupil coöperation is sufficient to justify

the use of any methods that offer any hope of success. The teacher whose personality "naturally" develops antagonism should concentrate on this problem exclusively. He should first try to find out what particular traits or mannerisms he has that tend to antagonize the class. He should then collect and persistently follow whatever suggestions toward improvement can be obtained from friends, supervisors, pupils, or professional literature. Such suggestions are outlined in Chapter VIII. The essential factor in the improvement of a teacher's personality is the persistent and intelligent effort to keep a class in respectful good humor. Anyone who wishes to acquire a good teaching personality can usually do so, provided the desire is sufficiently strong.

*b. Finding pupils' interests and "lines of least resistance."* The most obvious means of securing coöperation is to coöperate. Hence, the traditional method of making work interesting is to find out what pupils want to do and then to help them do it. The limitations of the method are clear enough; pupils usually want to do what they already know how to do, — hence present interests do not lead to useful learning in themselves. The method, however, is highly useful when present interests are related to useful learning activities in effective coördination. The pupil devoted to the reading of detective stories will often coöperate in the writing of detective stories more readily than in the writing of anything else. He can then be taught how to overcome his difficulties in more useful kinds of writing.

Procedures that are useful in finding pupils' interests are well set forth in many standard texts on teaching. Such procedures should include the various techniques of case study that have recently been developed to the point of real objectivity. Any teacher may diagnose pupils' interests roughly by cross-questioning them about their hobbies, use of leisure time, favorite reading, and the like; by visiting homes and interviewing parents,

and by close observation of the pupils' attitudes toward different phases of the work. The individuals whose lines of least resistance are not revealed by these cruder methods should be studied more intensively through experimental assignments, appropriate tests, and consultation with previous teachers.

*c. Providing opportunity for self-expression.* When pupils' present interests have been identified, there are four important points to be considered in providing means of expressing them. The first is, of course, to relate the present interest to the work at hand. Just how to do this depends necessarily upon what the interests are and what the work is. A safe rule is to present the work as a means of satisfying the interest more completely — as when laboratory technique becomes a means of making a certain experiment succeed, when paragraphing becomes a means of having contributions accepted for the school paper, and when a knowledge of historical facts becomes the means of proving one's point in debate.

A second means of providing for self-expression is to make all class work as clear and as definite as possible. Pupils' failure to coöperate is perhaps as frequently due to confusion regarding the teacher's requirements as to any other single cause. Guide sheets, written assignments, demonstration, and direction of the pupil at work are useful in securing definiteness.

A third means of encouraging self-expression and the coöperation which results from it is to determine the proper degree of difficulty. Work which is too easy, which presents no "challenge," is as unlikely to secure pupils' coöperation as work that is too difficult. The same degree of difficulty will not serve for all pupils. To determine the relative difficulty of the given subject matter for different ability groups within the class is thus essential. Tests reveal such difficulties.

A fourth provision for self-expression is to share responsibility

for class work with the class. When the teacher's plans are made, the practice of referring them to the class for approval and criticism is a courtesy that most pupils respond to. Nor should such approval be requested in a purely formal sense. There are many ways in which pupils' advice concerning the treatment of subject matter can be used to good advantage. Pupils can readily be trained to report their difficulties if the teacher consistently bases class work upon the removal of such difficulties. They can also offer helpful suggestions as to how the difficulties of other pupils may be overcome or avoided.

*d. Emphasizing interesting aspects of subject matter.* The teacher with whom the pupils coöperate most cheerfully is he who can readily select aspects of the subject matter that are directly appealing. There are various ways by which teachers can develop this skill. Care in collecting effective illustrations, patience in finding applications that are familiar to pupils, and willingness to let pupils develop their own approaches that may seem irrelevant, are all useful. Too few teachers conscientiously undertake to "sell" their subjects. Few pupils can recognize values for high-school subjects that are not made explicit and convincing through skillful demonstration and illustration in terms of everyday life. Values that make a direct appeal to the indifferent pupil are not easy to find for all subjects. To determine such values as can be made attractive without misrepresenting the facts is an urgent problem for the individual teacher. When direct appeals are lacking, indirect appeals should be used. The teacher must distinguish clearly, however, between matters of interest to him and matters that interest the immature pupil. Popular literature is perhaps the best source of striking yet truthful illustrations.

*e. Selecting interesting methods of directing group work.* The fact that some teachers can make any subject matter interesting

is explained by their skill in finding interesting methods. It is virtually impossible for any teacher to find phases of certain units of the given course that will prove interesting to all pupils in a large class. But the skillful teacher meets this obstacle by his choice of classroom procedures. Subject matter lacking in interest can be made interesting if taught by means of debates, contests, dramatizing, individual projects, demonstrations, and other devices that involve interesting activities. Thus pupils will coöperate in performing the learning activity who will not coöperate in learning the material for its own sake.

*f. Applying incentives to individual pupils (rewards and penalties).* What appears to be general indifference and antagonism on the part of the entire class may often be explained by the attitude of a small group of pupils. When such pupils have a reputation for lawlessness to maintain, they can seldom be reached by appeals to the class as a whole. Individual treatment is necessary. When approached individually, such pupils often welcome the opportunity to coöperate. If individual incentives are applied, the coöperation is easier to win. Such incentives consist in appeals to good sportsmanship, requests to use their influence over other pupils to better advantage, rewards in the form of special privileges for the completion of special projects, or penalties, nicely adjusted to the individual case, for continued neglect of responsibilities.

2. **Selection of case problems.** Difficulties in securing pupils' coöperation, of course, may arise in any classroom situation and in any subject. The type-difficulties listed in Section IV concern situations in which pupils' failure to coöperate is particularly evident. The situations themselves, however, are perhaps no more significant in the development of a coöperative attitude than any other situation of equal importance in teaching. The following discussion of case problems is thus confined, wherever

possible, to illustrations of the six type-procedures mentioned in the foregoing outline. The first two of the procedures are not stressed, since they are covered respectively in the following chapters. Various solutions proposed by teachers reporting the problems are omitted when they have no obvious bearing upon the attitude of the class.

## B. Developing a Coöperative Attitude

1. **Case problem No. 23.**[1] *A seventh-grade history class in Tampa, Florida, contains fifty pupils. About one third are of foreign parentage and speak English with great difficulty. About half are of normal intelligence. Because of the range in intelligence and on account of the language difficulties, the prevailing attitude of the class is a mixture of shyness, self-distrust, and indifference. The problem is to develop a coöperative attitude. (Type-difficulty IV. A.)*

2. **Principles selected from Part II that apply to the problem.** IV. A (1, 2, 3, 4, 5, 6, 7, 8, 9, 10), B (1, 3, 4, 7), C (1, 6, 7).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Omit, so far as possible, whatever material cannot be presented in terms of pupils' familiar experience. Find a common interest to which the work of the unit may be related; *e.g.*, cigar manufacturing: how tobacco was introduced to Europe by America, description of life in the early Virginia settlements and tobacco farms.

*b.* Discover the predominant interests of individual pupils, particularly of the more indifferent, by home contacts, private conferences, and group discussion. Make a list of such local situations, vocational interests, and other experiences as are found to hold the interest of the class.

*c.* Devise interesting class activities in which competition is encouraged. Group pupils according to abilities and according

[1] Reported by a teacher of six years' experience.

to their acquaintance with different local institutions. The local institutions represented include the tobacco industries, shipping, railroading, fruit growing, and fishing. Each of these might well be followed through by some one group as a basis for historical study. The development of the given industry can be traced in relation to other social developments in the country as a whole. General discussion and comparison of the group projects should make for sufficient variety and serve to present historical information in proper perspective. Such an arrangement of study groups will facilitate competitive exercises as a source of additional interest whenever attention lags. For general discussion and during the teacher's presentation of new material, pupils will be seated in a semicircle.

*d*. The pupils of this class respond best to a somewhat confidential approach. Severity is expected, but has little effect, since many of the pupils are used to severe treatment. Inattention is best checked by going to the pupil who is day-dreaming and asking him a question that has nothing to do with his conduct and perhaps nothing to do with his work. To give the pupil the idea that he is intrusted with some responsibility is an effective means of winning his loyalty. The few pupils who tend to be disorderly are impressed when the teacher drops his reserve and meets each pupil on an individual basis.

*e*. Play up the natural desire of foreign pupils to exercise leadership. Delegate as many duties of class routine as possible. Appoint pupil committees for the collection of illustrations from their fathers' places of business (shipping charts, farm posters, and the like).

*f*. Meet the language difficulty by taking plenty of time to make work clear to individuals. Train pupils to say so when they do not understand. Inspect work to see that directions have been understood. Devote most of the class period to indi-

vidual study and seat work, thus allowing maximum time for private conference with foreign pupils and others in need of help. Give sufficient attention to forms of English in speech and writing so that improvement in English is recognized to be an important aim of the course. Give individual drill exercises and explanations to those pupils who fail to benefit by general instruction in English.

4. **Criticism of solutions proposed.** The procedures apparently cover the situation, in the sense that some suggestions are offered toward meeting each of the major problems involved. Certain procedures are not sufficiently explicit, notably the suggestions toward finding pupils' interests and relating them to the course. For seventh-grade pupils it is not likely that projects based on their fathers' occupations can sustain useful interest throughout the course. Such interest should be sustained for separate units, if the projects change with the unit. A more intensive survey of pupils' play activities, preferred reading, and (in the case of the foreign pupils) knowledge of local institutions and civic customs, would appear to be necessary. To determine appealing values of the course in advance is impracticable, since the matters of most interest to the given class are best found by experiment. Some provision for recording pupils' different abilities in dealing with different types of historical material would probably help in selecting the material of most interest. Tests should serve this purpose. The most effective means of developing coöperation is clearly to select appropriate unit projects.

### C. Overcoming Indifference to Familiar Subject Matter

1. **Class problem No. 24.**[1] *A class of boys in a tenth-grade agriculture course fails to coöperate at times for reasons somewhat*

[1] Reported by a supervisor.

*peculiar to this subject; that is, their familiarity with farm problems leads them to feel that they have nothing more to learn. The problem is, accordingly, to find a method of presenting the material that will arouse interest and secure coöperation from the start.* (*Type-difficulty IV. A.*)

2. **Principles selected from Part II that apply to the problem.** I. B (1, 2, 5), C (1, 3, 4, 5, 7, 9, 10, 11); IV. A (1, 3, 4, 5).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Organize the unit on the basis of a job to be done on the farm. Analyze the information to be taught, then organize it with reference to its application to the job, for example:

| Data to be Presented | Teaching Organization |
|---|---|
| Consideration of facts concerning the following items as related to the seeding of oats: | 1. What seeding implement to use and why. |
| Soil texture, soil moisture, variety of soil, weed control, temperature, tools and implements, and soil preparation. | 2. How much seed to use per acre and why.<br>3. When to seed and why.<br>4. At what depth to seed. |

*b.* When certain boys have opportunity to carry on farm projects of their own, introduce the unit just previous to oat-seeding time. This will insure lively attention.

*c.* For boys who are not able to carry on the actual work of seeding oats while the unit is being taught, present the importance of the unit by comparing the methods employed by local farmers with the methods advocated by experts. Some such procedure as the following might serve:

(1) State that experiment stations have reached definite conclusions with regard to methods of seeding oats.

(2) Raise question as to whether local practices conform to these conclusions.

(3) Propose plan to investigate local practices and compare them with standard practice. Each boy lists items for a questionnaire to be filled out by visiting and reporting on different farms. The lists will then be summarized and a single questionnaire agreed upon.

*d.* Collect pupil experiences related to the unit as a means of stimulating discussion and suggesting topics of special interest. The following exercise may be checked by each pupil and other items may be added. The teacher may then summarize the returns and draw on the more frequent experiences throughout the work of the unit.

*Check such of the following items as are related to experiences you have had in seeding oats:*

I pulled the drill out of the shed, cleaned and oiled it, and adjusted it to sow three bushels.

I tested the drill to see if all the boots were clear.

I went down to the village with my father and we bought a broadcaster.

We had trouble with our single disc drill in the wet spots.

My father said to sow three bushels to the acre, but I thought two and one-half bushels would be sufficient.

We allowed an extra peck per acre to allow for treated seed.

We reduced our rate of seeding because we seeded clover with oats.

We broadcasted one year and found it as satisfactory as drilling.

We set our drill just deep enough to get into the moist earth.

*e.* Establish a coöperative attitude through contacts with individual pupils at their homes. Home visits are necessary both as a means of supervising projects and as a means of showing interest in the boys' affairs, meeting parents, and helping with the work of the farm. Serious cases of discipline and minor cases of indifference both respond to this treatment.

4. **Criticism of solutions proposed.** The procedures apply well, not merely to the course in agriculture, but to most other courses in practical arts as well. The distinction between pupils

who are able to apply the unit directly to projects of their own and pupils who have no projects, is particularly important. Many courses in practical arts contain pupils of both types, but are so organized that the needs of only one type can be met. Satisfactory coöperation can seldom be secured unless the needs of both groups are taken into account, as in the foregoing procedures.

The teaching situation primarily involves the selection of subject matter. As here described, the outcome desired is the ability to solve actual problems on the farm. This ability is best developed by the combination of classroom project and exercise described. The difference between the classroom exercise and the project is that the exercise helps pupils to understand subject matter and apply it to the major problem represented by the unit, whereas the project reverses the emphasis, — the problems are attacked directly.

### D. Holding Attention before and after Holidays

1. **Case problem No. 25.**[1] *A class of twelve boys in tenth-grade German usually shows an entirely coöperative attitude. The pupils are about equal in ability and their work is on the whole satisfactory. Each seems to want to master the language, and attention to class work is usually good. At certain times, however, usually just before or just after holidays, attention is very hard to hold. Failure to hold attention on these days endangers the morale of the class. Two or three days following the holiday are often wasted before the class gets back to the businesslike attitude. The problem is thus to collect interesting and useful exercises for the critical days.* (*Type-difficulty IV. B.*)

2. **Principles selected from Part II that apply to the problem.** I. C (5, 6, 7, 8), K (1, 4); II. F (3, 5), O (6); III. C (1, 2, 3), K (2); IV. A (1, 3, 5, 6), B (3, 5, 6, 7).

[1] Reported by a teacher of three years' experience.

3. **Solutions proposed by the teacher reporting the problem.** *a.* Select an interesting story such as "Das gestohlene Kind" or "Heissen Sie Meyer?" Mimeograph the story and distribute it to be read but not translated. Then write the following questions on the board to be answered in German: Was ist ein Raüber? Wo wohnt er? Was hat ein Raüber in dieser Geschichte getan? Wurde das Kind gerettet? — and the like.

*b.* Select a number of interesting short stories to be read by various pupils in turn. Allow only those pupils to read who can read fluently enough to hold attention.

*c.* Pass around some such magazine as "Aus Nah und Fern," letting different pupils retail the riddles, anecdotes, and jokes contained.

*d.* Give over the period to a song and recitation program — sing German songs, and recite ballads after the meaning is understood. Such exercises make for "Sprachgefühl" and are thoroughly enjoyed. Phonograph selections from German operas are useful when the music is tuneful and the words simple and clearly pronounced.

*e.* Oral reports on German customs, national heroes, and works of art may well be scheduled for days when attention is fitful. The reporters should be made to feel responsible for holding the undivided attention of the class.

*f.* Debates can be prepared on questions taken from German books read or upon the value of certain social and political practices in Germany.

*g.* Short German plays can be staged, whether parts are extemporized from the text or committed to memory.

*h.* Simple conversation games are available in which an entire class can take part. Of these the "old maid" variety of card matching games is perhaps the most popular. This can be played in groups of ten or twelve.

*i.* A reflector lantern provides an interesting program consisting of German views taken from postcards, pictures in books, and other material. The teacher should explain and interpret the views shown.

4. **Criticism of solutions proposed.** As a list of interesting exercises the suggested procedures are appropriate. The fact that they are intended only for special occasions subordinates considerations of relative value. The purpose is frankly to furnish entertainment that contributes as directly as may be to appropriate objectives of the course. Even so, the complete solution of the problem requires a selection of the exercises on the basis of experiment, if not on the basis of data concerning individual interests. It is altogether possible that the program of songs, recitations, games, reports, and the like, might fall flat and that a formal test might serve better to maintain the class morale. To abandon all efforts to teach and to declare a holiday, in effect, is often to encourage horseplay. It is sometimes safer to follow suggestions obtained from pupils than to plan a program that may or may not develop the desired attitude.

No ingenuity in planning exercises for entertainment can take the place of the teacher's personality in the classroom. A sufficient display of good humor, energy, interest in individual pupils, and skill in keeping pupils busy, will prevent disorder and inattention in any period. The secret of commanding attention at will is to teach almost entirely in terms of the concrete with sufficient variety to keep pupils guessing. The essential principles in any high-school subject have an infinite variety of applications to important experiences in which pupils' curiosity may be aroused by effective examples. Clear presentation of a few interesting examples will sustain sufficient interest in deriving rules, formulas, and principles that explain the examples. One basic

procedure to prevent inattention is thus to collect striking examples of the facts to be taught.

### E. Developing Pupils' Initiative (English)

1. **Case problem No. 26.**[1] *A tenth-grade English class is beginning the study of description as a form of discourse in oral and written themes. The general attitude is indifferent and few pupils, if any, seem to recognize the practical importance of clear and accurate descriptions. The problem is to arouse initiative in finding effective ways of conveying meanings.* (*Type-difficulty IV. C.*)

2. **Principles selected from Part II that apply to the problem.** I. G (1), H (1, 2), J (1, 2), K (4); II. D (1); IV. A (4), B (4), C (1, 2, 6, 7).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Convey as clearly as possible the idea that accurate description is one of the main purposes of all speech and writing. Select brief masterpieces of description to illustrate this idea. Choose conventional figures of speech and sentences rather than paragraphs; *e.g.*, "the lake shone like a mirror," then challenge pupils to find original descriptions equally effective.

*b.* Read short stories containing brilliant bits of description (O. Henry, de Maupassant, *et al.*) until pupils have some appreciation of the art.

*c.* Test the ability of the class to describe accurately and vividly by calling for brief descriptions of familiar sights and events; *e.g.*, write the directions needed to show a stranger how to find the city hall from the railway station, describe an orange so that an Eskimo who never saw one might recognize it.

*d.* Follow the test with similar exercises, adapted to the different abilities indicated by the test. Present the exercises

[1] Reported by a teacher of six years' experience.

as a game in which each writer tries to find the most effective descriptions.

*e.* Extend the exercises into longer written themes involving descriptions, either fanciful or matter of fact. Read the better ones to the class for criticism and commendation. Encourage pupils to collect and read good descriptions found in newspapers, textbooks, and other references. Show how a descriptive phrase that appears awkward may be polished by working it over with sufficient care.

*f.* Follow the reading of original papers by talks in which school events, scenes, and personalities are described. Encourage suggestions from the floor toward improving the comparisons, illustrations, and details used. After each talk let pupils write down the devices used to make the descriptions vivid. Make the class conscious of the points that good descriptions have in common.

*g.* Continue the making of descriptions by varied assignments; *e.g.*, to visit places of interest and report, to describe the specifications of a carpentry job, to explain a laboratory experiment, to write up imaginary travels. When the class has learned to note the characteristics of good descriptions, present a list of rules for use in class discussion of descriptions read.

*h.* Develop legitimate pride in writing good descriptions by encouraging the pupil to submit work for the school paper and try out for the writer's club.

4. **Criticism of solutions proposed.** The procedures are restricted to the teaching of descriptive writing and consist of suggestions which may or may not serve the purpose. On the whole, the plans are not entirely convincing, probably because no evidence is supplied concerning the specific interests or aversions of the given class. One feels that the teacher is sketching an ideal rather than a practical program.

The procedures might well be improved by more definite provision for the few pupils whose dislike for descriptive writing is most pronounced. Such questions as the following should be met: By what sort of personal approach may the class best be persuaded to take the unit seriously? What procedures might be used to find out what particular objects, scenes, or people the class is best able to describe? How may the teacher determine the standard of writing to be set, *i.e.*, how difficult descriptions should pupils be expected to write? How may the less coöperative pupils be made to assume responsibility for the work of the unit? How may stimulating devices for the teaching of description best be collected from texts on methods of teaching high-school English? None of the foregoing questions receives adequate treatment in the solutions proposed. Yet each one is important.

### F. Developing Pupils' Initiative (Civics)

1. **Case problem No. 27.**[1] *An eighth-grade class in civics has been subjected to drill upon textbook material to the point where originality and initiative are all but extinct. As a class, the pupils are helpless when confronted by a problem well within their social experience, they are unable to distinguish relevant from irrelevant reference material, and they assume no responsibility toward planning their work. At least three fourths of the pupils are placidly content to follow the teacher's directions.* (*Type-difficulty IV. C.*)

2. **Principles selected from Part II that apply to the problem.** I. F (1, 2); II. D (1, 2, 4), E (1, 5, 8); IV. C (1, 2, 3, 4, 5, 6, 7); V. E (5).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Establish the routine of having all pupils write on the board the titles and pages of reference books for the benefit of the class.

[1] Reported by a teacher of seven years' experience.

Encourage them to find new, interesting, and relevant material. Allow considerable choice of collateral reading in all assignments.

*b*. Encourage individual comments and criticisms by giving pupils plenty of time to develop the suggestions volunteered. Each original comment should invariably be followed by judicious praise.

*c*. Base the discussion of any civic topic or problem upon illustrations and cases supplied by pupils themselves; *e.g.*, in discussing franchises, " who can name one company to whom the village of Freeport has granted a franchise? What are some of the provisions you would expect to find in that franchise? "

*d*. Organize civics clubs, pupil councils, and other parliamentary bodies to give responsibility in planning and conducting programs and useful school projects.

*e*. Assign various definite tasks that require independent planning to pupil committees, — for example, making charts, maps, diagrams, and other illustrations.

*f*. Prepare a list of ways in which initiative may be expressed, also a list of activities showing lack of initiative. Discuss the lists with the class and ask for additions to either list. Give special recognition to pupils who voluntarily perform activities on the first list and call attention tactfully to pupils who do not. Have pupils rate themselves frequently on the basis of both lists by checking the activities performed, both those which show initiative and those that imply the lack of initiative.

*g*. Supervise individual study to discover pupils who work blindly and with no clear sense of direction. Offer concrete suggestions to encourage short cuts to desired results, original methods of attack, and the like. In the worst cases, estimate the minutes wasted during a certain period and confront the pupil with the evidence.

*h*. Present all assignments in problem form so far as possible. Allow pupils to work out the connection between the problem

and the text with no more assistance than they need to start them thinking.

*i.* Make pupil committees responsible for oral report programs to the extent of choosing topics, selecting references from the library, recommending speakers, and directing the proceedings; *i.e.*, introducing speakers, taking necessary notes, and the like. Other programs may be planned similarly for special occasions.

*j.* Hold each pupil responsible for the detection and correction of his own mistakes in both oral and written work.

4. **Criticism of solutions proposed.** Aspects of the problem that do not directly concern the securing of coöperation are covered sufficiently in the case problems of Chapter IV. As means of securing coöperation in the development of initiative, the procedures ignore many important factors. For example, no reference is made to the effect of the teacher's personality upon the development and exercise of pupils' initiative. Unless the teacher can induce pupils to compete for the distinction of contributing the best suggestion, plan, illustration, solution, and the like, the complacent attitude will persist. Furthermore, no specific attention is given to methods of finding pupils' interests and experiences that are related to problems in civics. Such diagnosis is necessary to determine the ways in which initiative can best be expressed — as, for example, by proposing civic problems, within the pupils' experience or reading, for which each pupil may seek the best remedy. The teacher must follow up group methods by the more concrete suggestions that apply to the individual case.

## G. Developing Initiative in Collateral Reading

1. **Case problem No. 28.**[1] *A class in senior chemistry has little or no interest in collateral readings. Assigned references are*

[1] Reported by a teacher of three years' experience.

*read perfunctorily without any evident effect upon the pupils' understanding of principles discussed in the text and applied in the laboratory. The problem is to devise some means of arousing initiative in selecting appropriate references and in making intelligent use of the materials read. (Type-difficulty IV. C.)*

2. **Principles selected from Part II that apply to the problem.** I. F (1, 4); III. I (1, 2, 4, 5); IV. C (1, 2, 5, 7).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Organize the class into groups, each group to study the applications of chemistry to some special field. Various important fields may be listed against the units of the course to show what units apply most directly to each field. Each pupil will be held responsible for a term report on chemical applications in some one field. One period per week will be given over to the discussion of brief reports concerning the application of the current unit to the various fields covered.

*b.* A convenient means of motivating the reports will be to work up interest in the college scholarships awarded annually by the American Chemical Foundation to high-school pupils for prize essays upon one of six subjects. The subjects specified may serve to define the fields to be covered by the projects of different groups: "The relation of chemistry to the home, Health, National Defense, Agriculture, the Enrichment of Life, and the Development of Home Industry in the United States." (Each scholarship covers tuition for four years at any college with a stipend of $500. In addition, six prizes of $20 are awarded.) Were no such incentive available, the reports could be written for permanent filing in the library, for a local prize award, or as a regular competition encouraged by the department.

*c.* Present each unit of the course with some direct reference to the reports. Adapt laboratory work to the reports whenever departure from the laboratory manual does not interfere with the

pupils' command of the unit. Discuss methods of study employed in working up material at the report periods for the purpose of locating and removing inefficient methods of collateral reading. Confer at regular times with members of each group who are least able to select and organize materials effectively.

*d.* Prepare guide sheets for each unit to emphasize applications in the different fields and to provide a few suitable references. The following example shows how such a guide sheet might be prepared for the unit on oxygen:

*Agriculture.* How is oxygen used in the preparation of food? References: Bailey, C. H., *Cereals*, chapter 6, pp. 106 ff.; Browne, C. A., *Sugar and Sugar Producing Crops*, chapter 7, pp. 131 ff.; Chase, E. M., *Fruits and Vegetables*, chapter 8; Moulton, C. R., *Meat as a Source of Human Nutrition*, chapter 13, pp. 283 ff.

*Industry.* What uses are made of oxygen in industry? How is oxygen prepared for commercial use? How is oxygen stored for transportation? What is the function of oxygen in the metallurgy of iron? Reference: Robinson, C. S., *Industrial Gases*, Volume I, pp. 118 ff.; how may oxygen be considered a constituent of the soil? What is the arc process for the preparation of nitrogen? How is oxygen made to combine with nitrogen in making nitrates by the arc process? References: Deemer, R. B., *Chemistry in the Fertilizer Industries*, Volume I, pp. 103 ff.; Brownlee, *Elementary Principles of Chemistry*, pp. 270 ff.

*Health.* How is oxygen used by the physician? Why is it desirable to remove plants from the sick room at night? What is a pulmotor, and how does it work? References: Brownlee, *Elementary Principles of Chemistry*, pp. 23 ff.; Greer & Bennett, *Chemistry for Boys and Girls*, pp. 83 ff.

*National Defense.* How does oxygen enter into the question of national defense? What is a common constituent of all explosives? What is the relative rapidity of chemical action in explosions? How would you define the chemical process that goes on in explosions? References: Lefebure, V., and Foch, Ferdinand, *The Riddle of the Rhine*, chapter 1, pp. 17 ff.; Reese, C. L., *Military and Industrial Explosives, Chemistry in Industry*, Volume II, pp. 51 ff.

*Enrichment of Life.* What will I gain from the study of chemistry? References: Gregory, Sir Richard, *The Spirit and Service of Science*, chapter 1.

4. **Criticism of solutions proposed.** The procedures constitute an interesting project in collateral reading. As a motivating device, the organized plan of coöperative reports should accomplish the purpose stated; namely, to develop intelligent initiative in collateral reading. As a teaching procedure, however, there are various obstacles to be overcome before the plan can be expected to work smoothly. Unless considerable time is given to private conferences, few pupils are likely to carry on their investigations from week to week without tedious duplication of material and consequent loss of interest. A variety of carefully selected report topics from which any pupil may choose freely in each unit might better sustain interest and might contribute more significant material for organization under the various fields at the end of the course. Since such report topics will cut across the regular units of the course, confusion from this source can only be prevented by clearly subordinating the report topics to the units.

## H. Making Pupils Courteous

1. **Case problem No. 29.**[1] *A large class of boys in ninth-grade algebra has formed the habit of giggling or laughing loudly at mistakes made by individual pupils. The general attitude tends to become frivolous whenever any incident occurs that is at all out of the ordinary routine. Whatever can be laughed at is laughed at, and the laughing becomes disorderly unless the teacher calls the class to order at once. The problem is to correct this attitude by teaching the essentials of common courtesy.* (*Type difficulty IV. D.*)

2. **Principles selected from Part II that apply to the problem.** II. A (5, 6); IV. A (1, 8), D (4), I (1, 4, 5, 7).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Try to remove the opportunity for giggling by making class

[1] Reported by a teacher of three years' experience.

activities more interesting. In presenting a new unit such as the formula, base all class discussions on concrete examples. Show the value of formulas by illustrating their use in medical prescriptions, glass making, job specifications in assembling Ford cars, aëroplanes, steel buildings, and in other familiar applications. Show pupils how to find and use different formulas, for example — have pupils find the perimeter of a cube when one side is three inches; then have the results stated in a general formula applicable to any cube.

*b.* Eliminate opportunity for giggling by keeping all pupils busy. As soon as a given principle has been explained to the point where pupils can apply it, let each pupil work out the solution of illustrative problems independently and on paper. The gigglers will then have less chance to find things to laugh at.

*c.* The teacher should exemplify an attitude which combines a sense of humor with a sense of purpose; that is, laugh at anything really funny and keep cheerful always, but show that cheerfulness does not prevent one from getting things done. Persistence in this attitude should have a desirable effect on the class.

*d.* Make a sufficiently careful study of the disorderly pupils to locate underlying causes for the trifling attitude. Confidential talks tend also to prevent the sort of foolishness that proceeds from the feeling of remoteness from the teacher. Go to pupils who are about to start giggling and talk to them about something quite apart from conduct as pleasantly as you can. This should tend further to secure coöperation. When the trifling attitude results from extreme nervousness, desire to show off to classmates, or a desire to embarrass the teacher, meet each cause by appropriate action — *e.g.*, recommend medical attention, provide legitimate opportunity to hold the attention of classmates, cultivate the pupil's good will by personal courtesies.

*e.* Teach courtesy directly by force of personal example, by discussing the practical importance of courteous behavior in all social and business relations, and by specific individual instructions to the few pupils chiefly responsible for the general attitude.

4. **Criticism of solutions proposed.** The problem of teaching such social traits as courtesy to an entire class usually resolves into the problem of making individual pupils courteous. Procedures useful in developing individual traits are discussed in the following chapter. The foregoing procedures apply to the class as a whole and are therefore important. As a means of securing coöperation they are promising. As a means of securing order, perhaps more stress should be placed on the sharp rebuke at the first appearance of a trifling attitude. To bring the class up sharply against the fact that the teacher will not tolerate flippancy toward the work of the course will often save many weeks of skirmishing for pupils' personal coöperation. When the teacher has made it known that he is uncompromising in such matters, it is easy to change the pupils' respect for authority into respect for the teacher's good sportsmanship.

## I. Developing Carefulness in Written Work

1. **Case problem No. 30.**[1] *A ninth-grade class in "occupations" (vocational civics) appears entirely indifferent to the form and appearance of written work submitted. The general attitude seems to be that no questions should be asked about form so long as the content of papers is satisfactory. How to convince the class that form and content are inseparable constitutes a serious problem. (Type-difficulty IV. E.)*

2. **Principles selected from Part II that apply to the problem.** II. M (1, 4); III. H (1, 3, 4, 5), M (1, 2, 3, 4, 5, 6); IV. E (1, 2, 3, 4, 5, 7), F (1, 2, 3, 4).

[1] Reported by a teacher of two years' experience.

3. **Solutions proposed by the teacher reporting the problem.** *a.* Attend first to the efficient teaching of correct usage and proper form in papers submitted. Next establish class regulations covering rejection of slovenly papers, the detection and correction by pupils of their mistakes in all papers submitted, and privileges to be earned by proper attention to the appearance of written work. (See case problem No. 20.)

*b.* Set an example to the pupils by careful attention to the teacher's own writing on the board and on papers returned. Give proper attention to the tidiness of the teacher's desk, arrangement of book shelves, and the appearance of the room in general. There is no need to appear fussy if the teacher explains the importance of neatness.

*c.* Explain the practical importance of neatness as a means of making a good impression on strangers even though slovenliness is a comfortable quality among friends. Show that neatness is essential in a laboratory or office. Important papers must be filed and indexed neatly to be found. Writing must be legible to be understood. Papers must be attractive to receive attention. Take the class to see some well-kept files. Use convincing illustrations to show the close connection between neatness and accuracy and the necessity of neatness in all important business papers. Compare neat and untidy papers to show how the neat paper commands respect.

*d.* By appropriate testing discover the mistakes in form that are due to ignorance and remove them by assigning corrective drill exercises to the individuals concerned. Use the exercises to increase pupils' respect for neat work. Discover also the pupils who regard untidiness as a mark of independence and try to change their attitude by private conferences upon specimens of untidy work. Reject all slovenly papers as a matter of course.

*e.* For a certain period of time require each pupil to have each written paper read and signed by some other pupil. This regulation tends to increase responsibility for careful attention to form. Emphasize importance of self-criticism.

*f.* Publicly commend improvement of any kind such as use of new vocabulary instead of slang, clearness of organization, and arrangement of material on the page. Post good papers and call attention to their good points. Use sarcasm judiciously to ridicule glaring errors when pupils will not be offended and when ridicule is more effective than exhortation.

*g.* Develop rules to be followed in all written work by discussing mistakes pupils can recognize. Post the list of rules conspicuously and refer to them in returning papers for correction.

4. **Criticism of solutions proposed.** Increasing pupils' attention to the appearance of written work is usually best accomplished by skillful appeals to pride. For this reason, it is wise to teach a slovenly pupil how to do some one thing neatly, then praise him for it to a point from which he is ashamed to backslide. When pupils attend to some one detail carefully, the cure may be extended to their written work as a whole. A useful device is to post a self-rating scale by which each pupil may criticize and correct his own papers. The problem can only be solved by coöperation among teachers.

## J. Developing Honesty

1. **Case problem No. 31.**[1] *A tenth-grade class in chemistry is disposed to cheat whenever the temptation arises. Laboratory notes are copied, information is given during written tests, and the class as a whole does not consider such practices to be dishonorable. The attitude is rather tolerant of cheating so long as it is "aboveboard." The problem is to change the attitude without causing pupils to cheat furtively.* (*Type-difficulty IV. J.*)

[1] Reported by a teacher of two years' experience.

2. **Principles selected from Part II that apply to the problem.** II. H (4), P (4, 6, 9); III. K (6), L (6, 12); IV. J (1, 2, 3, 4, 5, 7, 8); V. F (1, 4).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Attack the problem first by emphasizing the uselessness of bluffing in connection with any sort of scientific thinking. A dishonest worker in the physical sciences could not escape detection by anyone who came in contact with his work. Describe the heroism and consecration of eminent scientists, who have given their lives to discover and explain *the truth.* Give examples of the extent to which engineers' plans, doctors' prescriptions, chemical formulas, and all other scientific data need to be checked and verified before they are used. Convince the class that time is more than wasted if results are inaccurately reported. Follow such talks by the positive teaching of scientific method at every good opportunity. Try to develop a respect for scientific procedure to the point that makes dishonesty seem treasonable. This respect is best developed by commending all evidence of originality and care in pupils' own work.

*b.* Emphasize the need for accuracy and honesty in all scientific work by force of personal example. Use terms accurately, take pains to verify all statements, and call attention to detail that is needed to reach dependable results. Take sufficient pains to show the practical value and importance of all experiments and readings assigned.

*c.* Identify the few pupils who are most dishonest. Make sure that they understand what cheating is. Give definite and personal directions in private concerning methods of recording experiments and taking tests. If the cheating continues, have the work done after class or place the pupils apart where they cannot get illegitimate help without being seen.

*d.* Experiment with different forms of tests. Construct tests

that are sufficiently interesting, practical, and thought-provoking to hold the pupils' attention. Encourage pupils to say they do not know or that they do not see why they should know, rather than attempting to bluff.

*e*. Sterilize the laboratory environment of temptations to cheat by having experiments recorded directly in the looseleaf notebook rather than written up on separate paper first; require some brief oral report on the experiment from each pupil before the experiment is written up; require the results of each experiment such as precipitates, colored solutions, and the like, to be shown to the instructor. Likewise, make copying difficult during examinations by avoiding undue emphasis of marks; grade papers simply as "satisfactory" and "unsatisfactory" whenever the school regulations permit. Mimeograph test questions when possible to prevent pupils from "standing up to see the board," seat pupils at alternate desks, and forbid talking of any sort after the test questions have been explained.

4. **Criticism of solutions proposed.** Wholesale and open cheating in any class is best checked by the teacher's contagious enthusiasm for the work. The class as a whole is not likely to be impressed by appeals to their common sense, as in the first solution proposed, unless, in addition, they have a genuine respect for the subject and a lively satisfaction in playing the game according to the rules. Much dishonesty is due to ignorance and thoughtlessness, which is best cured by appropriate private instruction. Willful group dishonesty should be handled by appeals to good sportsmanship. Many classroom activities are comparable in spirit and purpose to regulated athletics. He who violates the accepted rules of the game is automatically debarred from the success he hopes to achieve and from the respect of his associates. A healthy desire for fair play and the normal excitement in acquiring new skills, in solving new prob-

lems, and in satisfying intellectual curiosity constitute the best basis for a coöperative attitude toward the work.

## K. Procedure for Problem Solution (G)

For problems involving pupils' coöperation the following procedure is proposed:

1. Secure information concerning the pupils' present attitudes toward the teacher, the subject, and the course. The information is most readily secured *a.* by conducting personal interviews with the least coöperative pupils, *b.* by examining school records of previous work in the subject, *c.* by asking each pupil to write a brief answer to the question, "What is the one best reason you can give for taking this course?" (papers need not be signed), and *d.* by having each pupil list the subjects he is taking and rank them in order of preference.

2. Collect pupil experiences, curiosities, and other interests that pertain to the given course. The data may be obtained *a.* by a group questionnaire on which the teacher lists typical experiences related to the work and asks pupils to check those they have met (*e.g.*, clerking in a store (arithmetic), working on the farm (science), seeing certain (selected) moving pictures (English, history), and the like in other subjects); *b.* by asking pupils to list and keep a record of the things each would like to do or to find out in the course, and *c.* by private interviews with the pupils from whom no satisfactory response is secured by the questionnaires.

3. Collect at leisure the concrete illustrations needed to explain essential points of subject matter in terms of familiar and interesting pupil experience. Such illustrations may be obtained from popular literature, from pupils themselves, from other teachers, from books and articles on methods of teaching the

subject, and (best of all) from close observation of pupils' interests and classroom experiment.

4. Develop with the class a definite plan of work in which each may coöperate. Explain essential requirements in presenting each new unit of work, specify the amount and character of work needed to meet requirements, and invite whatever criticism the pupils are able to give. Appoint pupil assistants, delegate as much authority as possible, and share responsibility with the class as a whole for the proper conduct of the work.

5. Vary teaching procedures to prevent monotony and to allow each pupil to coöperate in whatever ways he can coöperate best. Provide for the exercise of the special abilities represented in the class, *e.g.*, speaking, reading books of a certain type, collecting material by observation, visits to libraries, museums, industrial plants, *et al.*, and conducting experiments at home.

6. Simplify the approach to each unit so that each pupil can succeed in completing the first group assignments. When serious difficulties appear, adapt the group assignments to more than one level of ability with individual assignments for exceptionally bright and exceptionally slow pupils.

7. Cultivate the non-coöperative pupils individually (see Chapter VII).

8. Determine appropriate incentives, rewards, and penalties in the light of individual home environments, abilities, and personal attitudes toward the school and class.

9. Develop a teaching personality in which friendliness is combined with energy and leadership (see Chapter VIII).

# CHAPTER VII

## PROBLEMS ARISING FROM PERSONAL TRAITS OF INDIVIDUAL PUPILS

### A. Summary of Problems Involved

The purpose of the chapter is to discuss the more frequent and difficult problems resulting from the personal characteristics of individual pupils and affecting the learning of subject matter. The problems to be considered are confined to the high-school classroom. Group problems of social conduct, which in the lower grades are included in the course of study, and likewise problems of pupil guidance arising outside the classroom, are not directly discussed. The objective in view is the pupil's adjustment to the work of the course rather than character training as such.

To omit problems of character training from the present discussion is by no means to imply that character training is considered unimportant on the high-school level. Character training along the lines of intelligent self-control is by all odds the most important single need of adolescent pupils. Yet, if by character training we mean the sort of direct and intimate instruction in moral and social behavior that the child should receive from his parents, it is clear that the individual classroom teacher should not bear the full responsibility. The teacher's direct responsibility is confined to instruction in subject matter, broadly conceived. He is responsible for character training only insofar as certain traits of character determine the benefit the pupil receives from the course. Those traits must be developed that are neces-

sary in attaining the objectives of the given course. It is assumed that such objectives, in conjunction with the objectives of other courses, of assembly programs, of organized pupil activities, of counseling, and of other specific agencies provided by the school, will supply the main deficiencies in parental training. In spite of the fact that some teachers do so, no teacher should be expected to assume parental responsibilities for all the pupils in his classes. In a large city high school such an expectation would be absurd. No teacher can combat the powers of darkness single-handed in behalf of from one to two hundred pupils at once.

1. **The problems of moral instruction.** The classroom teacher should be held responsible for moral problems of three types; first, to change the personal trait or traits of a given pupil that prevent him from doing his work satisfactorily, such as timidity, laziness, carelessness, inaccuracy, and discouragement; second, to modify the traits that interfere with a harmonious relation between the pupil and the teacher or between the pupil and other pupils, such as conceit, tendency to monopolize class time, to pick quarrels, and to be rude to other pupils; and third, to modify or eliminate the traits that tend to demoralize the rest of the class, such as dishonesty, insolence, direct disobedience, stubbornness, and ostentatious indifference.

It will be noted that the traits mentioned include the type-difficulties of Part II, Section V. The number of traits that constitute classroom problems might, of course, be continued almost indefinitely. There are few, if any, character traits that do not give rise to serious classroom difficulties under certain conditions. The type-difficulties of Section V, however, probably represent the traits that high-school teachers in general find most troublesome and most frequent.

2. **The literature on moral instruction.** More has been written about moral problems than about any other type of problem in

teaching.[1] The close relationship between the church and the school of earlier centuries explains the fact that moral instruction has been the dominant theme of all educated writers until comparatively recent years. It is thus somewhat surprising that not until the present century has any noteworthy attempt been made to study the teaching of morals objectively. There is every reason to suppose that substantial progress will be made in the present generation toward more exact analysis, evaluation, and systematic solution of the perennial problems in this field.

At present writing there are at least three different approaches to the problems of moral training on the high-school level. Each of the three methods contains elements of the other two, yet represents a somewhat different stage in the teaching process. The methods referred to are the "case method," used in collecting information about the pupil; the "conduct assignment," used in helping individual pupils to overcome certain objectionable traits; and the methods of "group instruction" by which an entire class may study and cultivate certain traits or ideals.

3. **The "case method."** The case method represents the first stage in the process and is the most objective. It consists in collecting the facts upon which an accurate diagnosis can be made, and diagnosis is obviously the first step in dealing with problems of personal or social behavior. How to modify an undesirable trait, such as cruelty, timidity, or discouragement, cannot be determined without detailed information concerning the pupil's home life, attitude toward parents and playmates, nervous disorders and the situations which produced them, serious illnesses, and any other facts that are likely to explain the pupil's inability or unwillingness to coöperate. When the pertinent facts have been assembled, effective methods of correcting the trait are often clearly revealed. When it is known, for

[1] See chapter bibliography for references to professional literature.

example, that a pupil's unsocial attitude is the result of coddling by parents, it is clear that a gradual increase in the pupil's responsibilities and refusal to excuse the pupil from group obligations is a wise procedure. It is equally certain that severity will make matters worse when the unsocial attitude can be traced to parental neglect, indifference, and harsh treatment at home.

As a scientific procedure the case method deserves more confidence at the present time than any other technique applied to the treatment of character defects. Confidence is justified by the fact that the preparation of a " case history " is the basis for subsequent diagnosis and treatment of problem cases in such other professions as law, medicine, and social service. As employed by the social worker, for example, the method involves four elements: first, the case history; second, a set of criteria for the evaluation of the evidence collected; third, a technique or set of rules for recording additional information concerning the case; and, fourth, a procedure in making the diagnosis.[1] Each of these elements is usually represented in the techniques of diagnosis in the other fields. Hence, improvements worked out in one field may readily be taken over by others. The result is that procedures[2] for collecting and interpreting significant facts about individual pupils has been well developed by widespread coöperative effort.

The fact that procedures have been developed whereby pupils' character defects may be studied somewhat objectively, does not (unfortunately) mean that any teacher may use them to full advantage. Few teachers command either the time, the facilities, or the special training required to undertake the systematic

[1] After W. C. Reavis, *Pupil Adjustment*, pp. 51 f.

[2] Most adequately presented by W. C. Reavis, *op. cit.*, and by H. C. Morrison, *The Practice of Teaching in the Secondary School*, Chapter XXXI.

study of problem cases. The method is useful to teachers none the less since it may be used to obtain the more readily accessible facts by which reliable methods of treatment are often suggested. Adequate case studies made and published by experts can likewise be consulted by teachers for methods of treating particular pupils whose characteristics are similar to those of the cases reported.[1] That is to say, when the teacher has clearly identified a troublesome pupil as belonging to a type of case for which successful remedial treatment is fully reported by others, the same methods may be applied experimentally to the given pupil and the more appropriate methods selected for special emphasis.

How far the technique of case study can be adapted to the use of classroom teachers depends entirely upon the coöperative efforts of classroom teachers and supervisors. If no more than one hundred teachers interested in such problems were to record the significant facts of their problem cases, the existing classroom conditions, the treatment applied, and the effects observed, the collected evidence would provide solutions for a large proportion of such problems that at present are solved merely by accident. Only insofar as teachers in service and other students of pupil-guidance undertake to keep such records, can efficient methods be defined for the treatment of typical cases.

4. **Conduct assignments.** A somewhat original approach to the problem of developing character traits has been made by W. W. Charters of the University of Chicago.[2] His volume, *The Teaching of Ideals*, probably contains the most comprehensive discussion of specific methods for influencing character that has appeared to date. The methods are developed with direct reference to normal classroom conditions and are of particular interest on this account. Various methods of control are

[1] See W. C. Reavis, *op. cit.*, Part II.
[2] See W. W. Charters, *The Teaching of Ideals*, Chapters VI, XII.

described and concretely illustrated. Certain of the methods apply to the teaching of desirable ideals or traits to the class as a whole. Other methods apply to the systematic treatment of individual problem cases. Both methods deserve attention here but more particularly the latter.

When the pupil's troublesome behavior can be ascribed to a certain trait or group of traits, a systematic method of treatment is the "conduct assignment." The conduct assignment directs the pupil to perform certain definite actions by which the desired trait is expressed and which prevent the expression of undesirable traits. Character traits, such as rudeness and carelessness, do not exist in the abstract. There must be some actual situation or performance in which the pupil *acts* rudely or carelessly. By means of the conduct assignment the pupil is taught how to apply the desired trait to a specific situation.

Assume, for example, that a certain pupil is so careless about the appearance of his written work, his desk, and his clothing that the development of neatness becomes necessary to the pupil's success in the course. To exhort this pupil to *be neat* is not likely to have much effect. He has doubtless been reproved so often by parents, teachers, and others for untidyness that he comes to take a certain pride in being slovenly. The conduct assignment might here be used to advantage. First, the pupil might be shown that he can obtain more satisfaction by turning in neat papers than untidy papers. Striking illustrations should be used to make this fact convincing. He may then be shown that it is quite as easy for him to produce neat papers as for anyone else; that neatness consists in securing clean paper to work on, washing one's hands, putting a sharp point on the pencil, allowing proper margins, placing title, date, and signature in the appropriate place on the page, allowing proper spacing between words and paragraphs, writing on the line, writing letters of a

certain size, and attending to other similar details. By listing the detailed directions in the form of a standing assignment, the teacher can select one or two at the start for the pupil to master separately. When the pupil has learned to attend to each of the details at the same time, he has learned to be neat in writing papers. He may then be taught by similar methods to become neat in the care of his desk, in his personal appearance, and in other respects.

The same procedure may be applied to more serious traits, such as timidity, dishonesty, and insolence. Arousing the pupil's desire to substitute good traits for bad is the most difficult step in the process, of course. It is here that the teacher's sincerity, friendliness, and ability to win the pupil's confidence are essential. The pupil must be brought to the point of recognizing his need for improvement, and must recognize it sufficiently to follow out the teacher's suggestions. When this point has been reached, the conduct assignment answers the question "What are we going to do about it?" By specifying the sort of situation in which the pupil's behavior is unsatisfactory and showing him how he should act in each situation, with sufficient persistence, the desired trait will be taught. The pupil who receives positive instructions of this kind is encouraged by any progress made, however slight. He is trained to do certain things in certain situations, instead of being exhorted to *be* something that he isn't. The pupil who has received reprimands and negative directions is often incapable of improvement on his own initiative. The conduct assignment provides the necessary incentive and direction.

The conduct assignment, to prove successful, must be planned in the light of all available facts concerning the pupil and the situations in which the desired trait should be developed. The more closely the assignment coincides with the regular work of

the course, the more economical the procedure for both teacher and pupil. It is important, however, that the pupil should clearly distinguish between the conduct assignment for the development of a given trait, and the performance of class routine. In carrying out the assignment the pupil should be conscious of the trait he is trying to develop.

5. **Group instruction.** Group instruction in character traits applies the conduct assignment to an entire class by making the class work consist of such assignments. Its effectiveness thus depends upon how strongly each member of the class feels the need of improvement in the traits specified. There are, however, certain traits or ideals that lend themselves well to class instruction, for example, open-mindedness in connection with history, accuracy in connection with mathematics, and originality in connection with English, fine- and practical-arts courses. The traits thus taught directly to the class as a whole should usually be chosen with reference to their bearing upon the subject matter of the course, and should be objective rather than personal in their application.

Personal traits of a highly subjective character, such as honesty, unselfishness, and fearlessness, may at times be taught by group methods, however, if certain conditions are met. It is most important that vivid illustrations be selected and that the units of the course be planned with this end in view. By means of striking examples from stories, plays, and personal anecdotes a given trait may be rendered so attractive that high-school pupils will freely discuss its importance, their own limitations in regard to it, and will practice assiduously (though perhaps secretly) to develop it. The traits selected for group study must obviously be appealing to pupils of the given age, such as good sportsmanship, originality, and good humor. Colorless and conventional traits such as integrity, righteousness, and the like, are so vague

as to be virtually unteachable to adolescents by procedures that apply to the class as a whole.

Notwithstanding their development in European countries, there are few courses in American high schools devoted to instructions in morals as such. The explanation lies partly in the secular administration of the American public schools and partly in the difficulty of conducting such courses effectively. The closest parallel to the course in morals is found in such courses as civics, problems of democracy, vocational civics, and the recently developed course in "occupations." Such courses in a given school may conceivably raise the standard of pupils' social behavior and hence help to eliminate problem cases. Instruction of this kind will not greatly benefit the teacher who confronts a troublesome pupil in the mathematics class. The mathematics teacher may, however, be able to reach the troublesome pupil by methods applied to the class as a whole. Not merely the traits essential to efficient work in mathematics, like accuracy and speed, but also more personal traits, like courtesy and honesty, may sometimes be taught more economically by direct group instruction than taught incidentally to individual pupils.

6. **Establishing cordial relations with pupils.** The foregoing methods of attacking problems involving character traits, together with their various modifications, are all dependent for success upon the teacher's personality. Personality is a word which means little until the traits to compose the personality are specified. An attractive personality in a teacher might well represent a different assortment of traits and qualities than an attractive personality in a physician. It is accordingly necessary to determine the traits that a given teacher should possess in order to establish cordial relations with the pupils of a given class. As presented in Chapter VIII the methods whereby a teacher may himself acquire and develop certain traits are similar to the

methods of developing traits in pupils. Cordial, natural, and effective relations with the class as a whole and with individual pupils must be established before the teacher can secure the coöperation necessary to correct the objectionable trait.

### B. Procedure in Removing Objectionable Traits

A typical procedure for the modification of objectionable traits in individual pupils may be outlined as follows:

1. **Secure the pupil's coöperation in modifying the trait by one or more of the following procedures.** *a.* Obtain the pupil's friendliness by greeting him cheerfully, showing him minor courtesies, discussing his personal interests privately and with no reference to his shortcomings, speaking well of him to other pupils, and treating him out of class as an equal.

*b.* Record examples of the pupil's behavior to define the objectionable trait and to emphasize its unpleasant consequences upon the pupil himself and upon others. Also record examples of the opposite trait in the pupil's own behavior, if possible; otherwise in the behavior of other pupils.

*c.* At some appropriate time when friendliness has been established, invite the pupil to a private conference. Tell him that you want him to tell you things about himself so that you may be able to help him get along with other people better. Then present the examples informally. Suggest a few simple and pertinent questions which he may think over as a means of self-appraisal, to develop a teachable spirit.

*d.* Ask other teachers to help in bringing the importance of the desired trait to the pupil's attention, assuming they have not already done so. Approach only those teachers who can be trusted to refer to the pupil's deficiency in a friendly spirit.

*e.* In the case of personal traits, like conceit, stubbornness, and selfishness, the pupil's coöperation is often best secured

by the aid of other pupils. By requesting one or two of the pupil's friends to help him overcome the undesirable trait, the effect of the teacher's own suggestions is much increased.

2. **Present conduct assignments by one or more of the following procedures.** *a.* Select one or two simple activities from a list of conduct assignments previously planned, ask the pupil to perform these activities on every opportunity, and tell him that you will remind him when he forgets.

In the case of timidity, the pupil's assigned activities might include speaking to one stranger every day, looking directly at the person to whom he speaks, speaking in class so clearly that all in the room can hear, making a note of questions to be raised in the classroom, making a list of the things he has done of which he is proud (as a means of developing self-confidence), comparing himself with the more successful members of the class and noting the respects in which he feels himself to be equal or superior, making a list of desired accomplishments — *e.g.*, school offices to be won, teams to be made; and working energetically to attain them. Only a few such activities should be assigned at one time and these should be mastered before others are assigned. In dealing with timidity, for example, it is essential that the first assignments be made as simple and attractive as possible.

*b.* Provide many opportunities for the pupil to practice the activities assigned, both in class and out. The timid pupil, for example, should be given frequent chances to speak to the class, to strange pupils, to other teachers. He should have group responsibilities offered to him, if not thrust upon him too fast, — such as serving as monitor and committee chairman. He should be encouraged by other pupils to try out for teams, to enter class and school contests. He may also be asked to take charge of new and timid pupils to help them make acquaintances, find proper rooms, and become adjusted to the school.

*c.* Suggest to other dependable pupils certain specific ways in which they may help the timid pupil to find himself, — by electing him to minor offices, being friendly toward him, and giving him social responsibilities.

*d.* Take occasion to emphasize the importance of the desirable trait by incidental references to it in class. No references to individual pupils should be made except, perhaps, for occasional mention of those pupils who show the desired trait most conspicuously. To mention the trait in class tends to reinforce the teacher's private instructions to the individual pupil concerned. The effect upon the individual pupil is much greater when he feels that the entire class considers important the trait he is trying to acquire.

3. **Modify the conduct assignment and follow up the pupil's performance until the desired trait has been sufficiently established.** *a.* Call the pupil to a private conference at regular intervals to encourage his efforts, to criticize his performance of the conduct assignment, and to make new conduct assignments when the old have been mastered.

*b.* Ask other dependable teachers to check the pupil's performance of the assigned activities in their classes. Parents may also help if the teacher can be sure they will help in the right way.

4. **Interpretation of case problems.** In dealing with personal traits it is particularly true that any standard procedure must conform at all points to the personalities of teacher and pupil. It is by no means certain that any one method can be used in the same way by two teachers or that the same teacher can successfully apply the same methods to any two pupils. The following case problems should be read with these reservations in mind. The criticisms of procedures proposed are less emphatic than the criticisms found in other chapters for the reason that the teacher

has doubtless selected the procedures in the light of facts that are not fully stated in the problem. The procedures are thus of use to other teachers in dealing with similar problems only insofar as they suggest general methods of approach. Specific applications must always be developed by experiment and in terms of the given case.

## C. Overcoming Timidity

1. **Case problem No. 32.**[1] *John was a member of the graduating class who was taking eleventh-grade English for the third time. He sat in class with eyes alive to all that went on, he smiled at the funny things — in short, he was neither day-dreaming nor listless. But he either could not or would not talk in the presence of the class, either in reply to a direct question or to present topics that he had chosen, prepared in outline, and written out in full. In conference he insisted that he never had been able to speak in any of his classes, that he knew the material well and could write anything required. The last statement was true. His sister reported that he could not speak at home if guests arrived and that he once had been "all cut up" by the criticism of an oral talk received from a teacher in the elementary school. John himself had no recollection of this incident.* (*Type-difficulty V. A.*)

2. **Principles selected from Part II that apply to the problem.** I. C (11), D (4); II. B (4); IV. A (3), C (1, 6); V. A (3, 4, 6), K (1, 2); VI. C (1, 4), F (2, 3).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Try to locate the cause of his timidity on the chance that the cause can be removed. Ask the pupil, his sister, his parents, other teachers, and classmates if they can explain his difficulty. Suggest some possible causes for consideration.

*b.* Take every means of making sure that the pupil fully

[1] Reported by a teacher of six years' experience.

understands the work. Make assignments too easy rather than too hard. Encourage him to come for additional help. Remove any feeling of despair that may result from the sense of having missed back work or from apprehension of work to come. Praise his accomplishments.

*c.* Have the pupil rate himself for self-confidence in comparison with selected pupils in the class. If he rates himself low, present the importance of self-confidence in all his later life so that he will work hard to acquire it. Illustrate its importance in any vocation and in social life by stories and discussion of successful men who had to "bet on themselves."

*d.* Have the pupil make a list of all the things he succeeds in doing for one week. Go over the list with him, praising the achievements and suggesting how any failures might have been avoided.

*e.* Have the pupil help other (younger) pupils who are also shy by getting them into games, introducing them to classmates, and befriending them generally.

*f.* Discover the pupil's special interests and hobbies, then ask him to explain them to one or two pupils, then to a group, then to the class. Make full use of extra-curricular activities in this connection.

*g.* Provide equal opportunities to pupils to talk in class, as in calling on pupils by rows, dividing the class into teams and appointing the timid pupils as leaders. Then ask the timid pupil tactfully whether he has ideas to add before the discussions are closed.

*h.* Assign easy topics to the timid pupil for report, help with outside preparation if necessary, and introduce the report naturally in the course of a general discussion.

*i.* Make individual conduct assignments — *e.g.*, looking at the person or audience addressed, speaking loudly enough to be

heard, planning a few simple remarks beforehand, and making a point of *saying something* every day.

*j*. Be entirely fair toward other members of the class. Enlist their help in getting John to speak and avoid giving the impression that John is receiving special favors. Work first for an entirely friendly atmosphere in the classroom.

4. **Criticism of solutions proposed.**[1] The proposed solutions cover the principles selected and should succeed if persistently and skillfully applied. The means of diagnosing the case, however, are too superficial. Assuming that a specific cause cannot be located by the first solution proposed (*a*), the teacher should collect other pertinent facts by which treatment may be guided. Other teachers may be asked to describe how they have tried to help, what remedies they propose, and what kinds of work the boy does best. Parents should be consulted for the same information. The literature concerning treatment of "inferiority" cases should contain further suggestions. Time spent in collecting such information usually saves time that is otherwise wasted in applying inappropriate remedies.

### D. Dealing with Over-Zealous Pupils

1. **Case problem No. 33.**[2] *A tenth-grade class in modern European history is composed of unusually bright pupils. Judging from the amount of voluntary collateral reading done, a large majority of the class is genuinely interested in the work. The problem consists in the fact that all but two or three pupils wish to talk at once and to keep talking until their views are accepted. While the lack of self-control is general, about five pupils are so insistent in demanding the floor as to be intolerably rude.* (*Type-difficulty V. B.*)

[1] Timidity is used to illustrate the type procedure on pp. 211 ff.

[2] Reported by a teacher of one year's experience.

2. **Principles selected from Part II that apply to the problem.** III. D (2, 4); IV. A (2, 6, 7); V. B (1, 3, 4, 5).

3. **Solutions proposed by the teacher reporting the problem.** *a*. Reduce oral discussion to a minimum and direct the pupils' surplus energy to written work during the class period. Confine oral discussion to stated periods following the delivery of prepared oral reports and to other occasions when pupils have something of their own to contribute.

*b*. When the pupils' desire to perform results from physical restlessness, appoint such pupils to serve as teacher's assistants and assign them tasks that involve moving about the room, running errands, and other means of relief.

*c*. The periods reserved for general discussion of reports and other work should be conducted according to definite rules of order. The rules should be fully discussed and formally adopted by the class before they are applied. Regulations should provide for such difficulties as irrelevant remarks made to attract attention, discourtesies to the chairman, rudeness to the opponent in an argument, and any others that are frequent in the particular class. Before the rules are adopted, the teacher should emphasize the necessity of self-control, deliberation, and common courtesy in any business or social meeting. A parliamentary organization with standing and temporary committees is a useful means of making the class assume responsibility for good order.

*d*. Meet the individuals privately who offend most often. Go over the points previously made in class regarding the necessity for mutual forbearance in group discussion. Present the problem as one involving good sportsmanship and fairness to other pupils.

*e*. Ask such pupils to note on paper the remarks each wishes to make during the period. Go over the list with the pupil and have him decide how many of the items were better left unsaid.

Any important items may be presented to the class on the following day.

*f.* Make special assignments of work to the few over-zealous pupils where the desire to talk proceeds from being bored by the regular work of the class. Such assignments should appeal as much as possible to special interests.

4. **Criticisms of solutions proposed.** As here presented, the problem involves the entire class. When the desire to perform and the consequent discourtesy is confined to individual pupils, the conduct assignment needs to be planned in greater detail. Eagerness to contribute is seldom obnoxious when the pupil's remarks are on the point. The pupil who is merely out-thinking the class will usually respond to a request for fairness to other pupils and the privilege of working ahead independently. Pupils whose remarks are irrelevant should be systematically trained in selecting essentials from non-essentials. Such practice may be given by exercises of the multiple choice type either during the class period or outside.

### E. Overcoming Laziness in Bright Pupils

1. **Case problem No. 34.**[1] *A tenth-grade biology class of twenty members contains a twelfth-grade boy who needs the course for credit but who has elected biology on account of conflicts in his schedule. All this pupil has to do to secure the desired credit is to receive a mark of 50 on an objective test covering all required high-school subjects and given by the city administration. Since the class consists mostly of tenth-grade pupils, this boy finds few incentives to hard work. His attitude is courteous and his remarks in class are so intelligent that it seems unfair to punish him for loafing. The problem is to make his work up to his excellent abilities.* (*Type-difficulty V. C.*)

[1] Reported by a teacher of three years' experience.

2. **Principles selected from Part II that apply to the problem.** I. C (11), F (1, 4); II. K (1, 6, 8); IV. A (1, 4), C (1, 5); V. C (1, 2, 4, 5).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Collect and apply various methods of showing the pupil the injury of loafing and the benefits he may expect from hard work. This would involve collecting evidence of his ability to do good work in the form of intelligence test scores, reports from former teachers, and exhibits of his best work in the given course. To present the benefits of hard work convincingly the teacher must determine the pupil's interests as fully and specifically as possible. His plans for further study, favorite courses, and the favorite parts of each course, readings he finds most interesting, vocational plans, home and social attitudes, hobbies, and friends should be determined by private conferences with the pupil, his friends, his parents, former teachers, and others who have observed him under a variety of different conditions.

*b.* Such information should be used first in adapting the course so as to provide the most direct challenge to the pupil's abilities. This particular boy responds best to problems involving principles of genetics, whether applied to stock breeding or to problems of human heredity. When his offhand solutions to such problems are criticized, he will read somewhat widely for evidence in support of his views. This lead should be followed in the work of each unit.

*c.* Secure his personal confidence and friendship by cautious praise, by appealing to his pride, and by proposing interesting problems in the unit that require hard work. In helping the pupil plan his attack on such problems the teacher may also help him to develop systematic and efficient habits of study.

*d.* Develop initiative by conduct assignments that require him to find original applications of each unit to everyday life.

Some of these should be worked up as supplementary projects. The pupil, for example, found a series of articles in the *American Forestry Magazine* on the various uses of wood — "The Paper Age," "Our Oldest Industry — Turpentine," "Spinners in Wood," and others. He then volunteered to collect encyclopedia references on straw, bamboo, rattan, excelsior, oakum, linoleum, cork, linen, and other wood stem products. On the basis of this reading he was assigned a somewhat extensive report on the commercial uses of wood stem products as determined by the texture of the wood. The pupil's success with this report suggests that his attitude might have been greatly improved by letting him work on such reports exclusively.

*e.* Stimulate industry during the period by suggesting that a pupil of his abilities should be able to complete his assignments in class. Require him to budget his time among different kinds of work, record the time taken to complete each, and discuss methods each week by which to reduce his times without loss to the work. He should be held responsible for the completion of more than the average amount of work.

4. **Criticism of solutions proposed.** The procedures do not present conduct assignments in sufficient detail to suggest effective means of overcoming laziness among bright pupils in general. The following assignments have proved successful with typical cases:

*a.* Employ various means to make the pupil "chummy" with other bright pupils who are conscientious workers. Having him discuss other members of the class gives the teacher an idea as to which of the good workers he finds congenial. Indirect suggestion to the other pupils can often establish a friendship which in itself often promotes good scholarship.

*b.* Interests may be cultivated in the indifferent pupil by having him list (over the period of a week or so) the things he is

most interested in, the relative importance of such interests to him at present and at some future time, the interests of other pupils and adults whom he respects, the interests he thinks it important to develop, the points of contact between such interests and the work of the course, and other indications of "lines of least resistance."

*c.* A "flighty" girl is sometimes helped by being directed to list the activities regularly performed by her mother or some other responsible person which are unpleasant and tedious. When a satisfactory list has been made, the girl may be asked to supply her reasons to show why each activity should or should not be performed. The application of such reasons to her own case is usually obvious and beneficial. The same procedure may be applied to any pupil whose respect and affection for any hard worker has been discovered.

## F. Overcoming Laziness in Dull Pupils

1. **Case problem No. 35.**[1] *A member of a ninth-grade English class in a small country high school showed real stoic indifference toward the entire work of the course. He made no pretense of studying, made no voluntary effort to contribute any ideas in class, cut class as often as he dared, and never volunteered to make up the work missed. He seemed too lazy to divert himself by making a disturbance and was entirely content to sit and do nothing. The boy was the oldest member of the class. By consulting his parents it was learned that he was much younger than the three other children, who had all made sacrifices to keep this brother in school. It was evident that he had been protected and "managed" so carefully as to destroy any initiative he may once have possessed. His only evident interest was to escape school at the earliest possible moment.* (*Type-difficulty V. D.*)

[1] Reported by a teacher of two years' experience.

2. **Principles selected from Part II that apply to the problem.** II. H (4), P (2); III. C (1); IV. A (1, 3, 4), B (7); V. D (1, 3, 6, 8).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Determine the cause of the boy's listlessness; first, by observation, private conference, consulting other teachers, parents, and classmates; second, by applying mental tests, giving brief answer, survey tests, and written exercises to discover any part of the work in which he might have an interest, and experimenting with a variety of different types of assignment to see whether some one might stimulate effort; third, by persuading either parents or school authorities to have the boy given a thorough clinical examination for physical and mental disorders, to send the boy to a good school in a different locality, or to put him to work where he might learn something useful.

*b.* Pending the discovery of some cause for his attitude, try to find by experiment some "lines of least resistance." Ask him to list the things he would do if he could do just what he liked, the things he would most like to be able to do, the people he most respects. The only indication of interest so far obtained is that he spends his leisure time "hanging around" the post office and pool room.

*c.* Try to penetrate his complacency by drawing out his confidences and establishing some degree of personal friendship. To lend him books which are sufficiently exciting to evoke some expression of interest might help to establish a point of contact. Appeals to pride, vocational ambitions, desire for respect of family, teachers, and classmates were tried with no success. There seemed nothing in the boy to appeal to. Consulting other teachers and acquaintances was also unsuccessful. All who knew the boy said that he was utterly lazy, but could suggest neither an explanation nor a remedy.

*d*. Supervise class work so closely that the boy is obliged to complete some definite part of each assignment. When the work is missed by absence, require the missed work to be done in class before the current work. Make all such assignments of work as simple, interesting, and concrete as possible. Explain and demonstrate the value of each assignment.

4. **Criticism of solutions proposed.** The methods proposed are so theoretical as to indicate that the teacher has found no point of contact that might be followed up intensively. A busy teacher in a country school has seldom the ability and time required to diagnose a refractory case of this kind. The case properly demands study by a clinical psychologist over a period of weeks. The suggestions in solution *a* are therefore wisely arranged in three groups. The suggestions in the first two groups may be applied by the teacher himself; those of the last group are not, under the circumstances, likely to be applied at all. So far as the given case is concerned there is every reason to suppose that the teacher has done about all that can be expected. The school has failed to benefit the pupil and the fact should be frankly admitted. He is likely to learn more if allowed to go to work. The stimulus he finds "on the job" will probably be more helpful than the more artificial stimulus of the school.

Less obstinate cases of laziness sometimes respond to the following procedures:

*a*. Obtain as complete a case history as can be obtained from the pupil, his parents, his other teachers, and the school records. Administer two or three group mental tests (*e.g.*, Terman, Otis, National) and a standardized test of silent reading ability. Study the evidence to find out what work the pupil can do.

*b*. Require each assignment to be done during the class period; simplify it for the pupil and make the directions entirely explicit.

*c.* Ask the pupil before he works upon any assignment to write down the reasons for doing it, including reasons which apply to school work as such and reasons which apply to use of the material out of school or after he has left school. Go over the list of reasons with the pupil and add any others that he can be made to appreciate.

*d.* Secure the pupil's good will by personal kindnesses, firmness, patience, and tact in helping other pupils to get along with him. When the pupil's parents are coöperative, visits to the home often help to secure the pupil's friendship. The teacher who knows the pupil's status in the family is better able to share the pupil's point of view.

*e.* When the pupil's good will is assured, make conduct assignments that reach his laziness directly — for example, " get out of bed the moment the alarm clock rings, meet all school appointments punctually, do certain specified home chores well enough to meet definite specifications, make at least three voluntary suggestions or contribute three original ideas concerning the work of each class period." Such assignments may be discussed until the pupil sees that to do these things in the proper spirit will be certain to overcome his laziness. One or two such items should then be definitely assigned, and the pupil should report at least once a week on whether or not he has done them. As soon as the teacher can discover any specific ability or interest that is related to the work, the application of judicious praise and the suggestions offered to meet Case Problem No. 34 should prove effective. When the interests of other pupils will not suffer, responsibility for minor tasks in the classroom, chairmanship of clean-up committees, and monitorial duties are more effectively supervised and therefore more likely to be done energetically.

*f.* When no specific cause can be found for cases of extreme laziness, it is perhaps safe to assume that the cause is either physi-

cal disability of some sort or else the effect of discouragement due to failure and unsympathetic criticism. Physical disability, of course, demands medical attention and is often due to rapid growth. Discouragement can be removed by the treatment outlined for cases of timidity (Case problem No. 32).

*g*. Experiment systematically with various types of material and methods of presentation that may attract a favorable response and possibly reveal a latent interest. Ask one or two dependable pupils to help and suggest definite activities (in class, in school organizations, and outside of school) in which they may persuade the lazy pupil to take some active part.

## G. Directing Dull and Conscientious Pupils

1. **Case problem No. 36.**[1] *A ninth-grade class in French contains a pupil who is slow in all subjects except agriculture. He shows interest in all subjects, and each of his teachers considers him a conscientious worker, but his naturally slow thinking is further handicapped by weak eyesight. He tends to become discouraged by his failure to grasp new ideas readily and has frequent periods of depression. On the other hand, he has a strong character, the essential qualities of leadership, and is popular among boys of his own age. The problem is to develop the boy's self-confidence in work that is within his abilities. (Type-difficulty V. E.)*

2. **Principles selected from Part II that apply to the problem.** I. I (1,4), J (2, 3, 4, 5); V. A (2, 3), E (1, 3, 4, 5, 6, 7); VI. C (1, 2, 4).

3. **Solutions proposed by the teacher reporting the problem.** *a*. Apply tests of general intelligence and tests of ability to do the work of the course. If the pupil is clearly deficient, it may be best to have him drop the course. In case the pupil objects, he should be told frankly that he will have to work much harder

[1] Reported by a teacher of three years' experience.

than others and that the results are not likely to justify the effort. A sympathetic discussion of his need for French and of the fact that he must study it at least four years to obtain appreciable benefit, should make for a wiser decision.

*b.* If the pupil remains in the course, his discouragement should be minimized by presenting each assignment clearly, showing him how to proceed with the work, and supervising his work during the class period. Each assignment should be adapted to his abilities and should be so simplified as to minimize the chances of failure.

*c.* Develop self-confidence to overcome any unjustified discouragement. Conduct assignments for this purpose should encourage participation in school organizations, work on interesting projects supplementary to the course, and other activities in which initiative may be developed and expressed. To prevent the boy from slavishly following directions, the more he is thrown on his own resources, the better.

4. **Criticism of solutions proposed.** The foregoing suggestions if concretely applied should afford much help in dealing with cases of this type. The dull but conscientious pupil is a problem only insofar as he retards the class or develops an attitude of inferiority through repeated failures. He may be prevented from retarding the class by being dropped from the course. When it is best to retain him in the course, the inferiority attitude may be prevented by procedures suggested for the development of initiative (Case problems Nos. 26, 27, and 28) and self-confidence (Case problem No. 32).

## H. Overcoming Dishonesty in Bright Pupils

1. **Case problem No. 37.**[1] *A well-mannered, good-looking girl of sixteen causes trouble in a ninth-grade algebra class by unscrupu-*

[1] Reported by a teacher of two years' experience.

*lously copying other pupils' work. Her parents are well-to-do and highly intelligent. The girl is bright, friendly, and conscientious in all respects except honesty. She is deceitful in many little ways and apparently enjoys the reputation of being untrustworthy. The parents are entirely neutral in the matter. (Type-difficulty V. F.)*

2. **Principles selected from Part II that apply to the problem.** V. F (1, 4).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Collect recorded cases of the girl's dishonest practices, such as examples of copied exercises, untruthful statements, and minor thefts. Also collect instances of other pupils and other familiar characters whose reputation for being "fishy" and unreliable produced serious consequences.

*b.* Attract the girl's attention to her weakness in some striking way — as by seating her by herself or excluding her from class for a day. Then present the illustrations of her trait and its probable consequences as effectively as possible. Reinforce this by emphasizing the attitude of classmates toward her. Point out that no honest person can tolerate dishonesty in a friend or business associate. Allow some time for the pupil to think the matter over and to decide what she will do about it.

*c.* At the next interview find out whether the first talk has produced the desired effect of making the girl willing to reform. If not, it may be necessary to present the case to the class and ostracize the girl for a stated period. If so, talk over whatever proposals she has to offer and make them definite by putting them in the form of conduct assignments.

*d.* Make the conduct assignments cover such matters as the following: (1) "In all conversation hereafter make a conscious effort to understate facts rather than to overstate them. Keep a record of each statement you make that tends to enlarge upon

or to distort the facts in any way. (2) In all written work submitted for this course, write out the source of your material. If you receive help from anyone else, write on the margin from whom you received it. Make it perfectly clear what work is yours and what is not."

*e.* Develop the girl's satisfaction in being trusted by placing confidence in her honesty as soon as she shows a change of heart. Accept her statements literally and give her important commissions, like taking grade sheets to the office, as soon as she is able to resist temptation.

4. **Criticism of solutions proposed.** The suggested treatment of dishonesty appears adequate for pupils who have no other undesirable traits. In many cases, dishonesty is combined with insolence and disorder. Conduct assignments are an effective means of treating all such cases if the pupil can be brought to a teachable spirit, if the assignment is skillfully adapted to the individual, and if it is reinforced by public sentiment. The nature of the conduct assignment must be determined by the characteristics and environment of the pupils concerned.

## I. Overcoming Personal Animosities

1. **Case problem No. 38.**[1] *A nineteen-year-old boy in a class in problems of democracy, twelfth grade, is a perfect snob. He has no use for classmates who differ from himself in respect to religion, race, social status, and politics. Naturally enough, he is cordially disliked by teachers and pupils. He justifies his evident unpopularity by maintaining that teachers bear a grudge against him. He is quick to take offense and often starts fights in the classroom. In any general discussion he seldom speaks except to defend his pet prejudices. His remarks are therefore usually sullen and vindictive.* (*Type-difficulty V. I.*)

[1] Reported by a teacher of two years' experience.

2. **Principles selected from Part II that apply to the problem.** IV. A (1, 4, 7, 8), D (1, 2, 8, 9), I (6, 7); V. I (1, 2, 3, 4, 5, 6); VI. C (3, 4), F (1, 3), G (3, 4).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Make a careful study of the pupil's history to find the causes for the unsocial attitude. The parents seem chiefly responsible in this case, but they now recognize the boy's peculiarities and say they are eager to help. The boy's pet aversions should be listed, together with any facts that help to explain why he has formed them.

*b.* Emphasize the traits of open-mindedness and friendliness by direct group instruction, which is particularly appropriate to the course in problems of democracy. Utilize the materials of the course to make plain the dependence of social progress upon mutual tolerance between different social groups. Reinforce such teaching by organizing the class into committees and by developing a coöperative attitude in other effective ways. By regular group assignments require pupils to search for commendable characteristics in the social groups that are least popular in American society.

*c.* Make the pupil conscious of his prejudices by bringing his views in conflict with class opinion. Stronger measures such as ostracism from committees and class discussion, are likely to make him more stubborn and should be avoided.

*d.* Show a friendly attitude on all occasions and try to win the boy's good will by informal conversations out of class, by showing tolerance for his views, and by giving him every opportunity to support his contentions with evidence. Tell him frankly that you would like to help him learn how to get along with other people better. Persistent efforts to disarm antagonism by friendly and unobtrusive interest in his interests should bring about a teachable spirit in due course of time.

*e.* When the pupil recognizes his need for a more charitable and open-minded attitude, talk to him privately and make appropriate conduct assignments. Friendliness may well be stressed first. Have the pupil note and report friendly acts by other members of the class toward the pupils he dislikes. He may also note and record his own friendly services to such pupils. Open-mindedness may then be emphasized. Direct the pupil to read, observe, and report as many desirable qualities as he can find in some sect, race, or political party he dislikes. Go over the report with him and suggest others he has missed.

*f.* Conduct assignments should be used to remove the notion that teachers bear a grudge against him. Ask the boy to point out the teachers who seem to dislike him and to collect evidence of such dislike. Go over such "evidence" and show that it implies no grudge. Meet each of his points quietly and convincingly. Then encourage him to note instances in which teachers go out of their way to help him. Apply the same procedure to experiences out of school.

*g.* Follow up each type of conduct assignment incidentally until results are apparent. Call attention tactfully to the pupil's behavior, both in and out of class, whenever he expresses the objectionable trait.

4. **Criticism of solutions proposed.** The foregoing suggestions are not entirely convincing. Traits due to personal peculiarities of temperament or home environment do not respond to standardized treatment. Only when the teacher knows the pupil intimately can conduct assignments be devised to displace the objectionable trait. Many times, of course, the objectionable trait is so firmly established and the teacher's influence so restricted that no substantial progress is possible. The critical factor is the pupil's desire to modify the trait. When a sufficiently strong desire has been aroused by hero worship of the

teacher, by a sudden recognition of unpopularity, or by other means, a little positive suggestion goes a long way. The help of a few other influential pupils is also highly useful in correcting peculiarities.

### J. Procedure for Problem Solution (H)[1]

The following procedure is proposed for the solution of problems arising from the personal traits of individual pupils:

1. Record instances of the pupil's classroom behavior that reflect troublesome traits needing attention. Record also any other indications of the pupils' personal and social attitudes that may suggest methods of approach.

2. Collect information regarding the pupil from every available source. Few teachers can undertake to prepare a complete case history, but the more the teacher can learn about the pupil, the more wisely he can act. Facts should be collected especially with regard to the pupil's health, relations with parents, relations with other teachers, relations with other pupils, home interests, school interests, success in various subjects, success in other school activities, vocational interests, plans for further schooling, and standards of personal and social conduct. Such facts may be obtained from school records, other teachers, parents, family physician, the pupil himself, and other pupils. Occasionally a teacher may learn much from published case studies of pupils with personality defects similar to those under treatment.

3. Study the facts collected to record whatever causes for the pupil's unsocial behavior and whatever methods of treatment the facts may suggest.

4. Invent and apply whatever methods may remove certain causes without help from the pupil concerned.

[1] See also pp. 210 ff.

5. Plan and apply methods to secure the pupil's active coöperation and desire to modify the objectionable trait. Coöperation is usually secured when the pupil's present unpopularity and failures are shown to result from types of behavior that might readily be changed. Natural friendliness does most to secure pupils' coöperation.

6. When the pupil has acquired a teachable spirit, plan and apply conduct assignments to meet his peculiar needs. The assignments should ordinarily stress only one simple activity at a time, but the activity should be performed as efficiently as possible and with the desired trait prominently in mind. Such assignments must be followed up by friendly and systematic encouragement and criticism.

## CHAPTER VIII

# PROBLEMS ARISING FROM THE TEACHER'S PERSONALITY

### A. Summary of Factors Involved

A teacher's "personality" is a combination of personal traits or qualities. These personal qualities determine the manner in which the duties of teaching are performed. The efficient teacher not only does the right things but does them in the right way. To possess the necessary personal qualities is just as important as to perform the necessary duties, since the one depends upon the other. It is thus appropriate for this final chapter to discuss methods of developing traits that are essential to successful teaching, as represented by the type-difficulties of Part II, Section VI.

1. **Meaning of personality.** When a superintendent explains why a teacher has been dismissed, he is likely to say that the teacher is "lacking in personality." If the superintendent had observed the teacher more closely, he might have described the shortcomings more accurately by mentioning a number of things that the teacher had failed *to do*. It is mostly in terms of what we do that others can tell what we are. Hence the teacher "deficient in personality" is one who fails to meet a number of specific problems in the proper way. The failure may be described as lack of initiative, self-confidence, sense of humor, patience, or other traits, to be sure. But in each concrete situation the teacher displays personal qualities by what he does or by what

he fails to do. Self-confidence, for example, is displayed, among other ways, by smiling and by looking people in the eye. Traits of personality are always expressed in behavior, and behavior largely determines personality.

2. **Environment.** The process whereby people become different is the dominant theme of all literature. Significant changes in characters of fiction are usually brought about by external events, — whether a conversation with Hamlet's ghost or a visit to Gopher Prairie. Sometimes the event brings about a course of action that produces the trait, as when the death of a parent throws a listless child on his own resources and develops initiative. More frequently perhaps the event simply encourages the change, as when meeting new associates makes a person feel the need of becoming more tolerant, more humorous, more businesslike, or more forceful. Table manners are proverbially better among strangers than at home. Hence new environments often develop new traits because the individual is constantly reminded that the old traits are inappropriate. It is easier to break old habits in new surroundings, which applies, of course, to good habits and bad habits alike. The teacher accordingly needs to study his social environment as a determining factor in the development of personal traits. By seeking new friends and new responsibilities he can make the acquirement of new traits much easier.

3. **Concentration.** No important trait can be developed without a " change of heart." Camp meeting conversions and New Year's resolutions are temporary because the individual forgets his resolutions and goes about his business according to habit. " By taking thought " he recognizes the fact that he spends too much time and money on amusements. But he fails to take thought when he meets a tempting invitation with a comfortable roll of bills.

Teaching, like other systematic institutions, is routinized to a very large extent. It is thus extremely difficult for the teacher who feels the need of becoming more friendly or more tactful to throw off habitual modes of conduct. The people and the situations he meets every day seem to expect him to behave as he has always behaved. He is thus not likely to turn over a new leaf unless he checks his conduct in all situations by deliberate concentration upon a single trait to be acquired. A deliberate and steadfast purpose is essential. Concentration is thus another determining factor in the development of a trait.

4. **Practice.** The fact that personality and conduct are so closely dependent contains the solution to most problems of "personality." If what we are is shown by what we do, we can become different by acting differently. Hence a teacher can in a large measure develop any desired trait simply by doing the things that others do who possess the trait. The teacher who wishes to become more friendly with pupils, for example, should observe some other teacher who is noticeably friendly with pupils until he can analyze "friendliness" into a number of specific activities; such as doing small favors for pupils, greeting them cordially when meeting in halls and elsewhere, listening with interest to pupils' "small talk," and saying pleasant things about one pupil to another. He has then to *practice* such activities until they become habitual. He will then have acquired the trait. Practice is thus a third factor in trait development.

5. **Factors in trait development.** Traits are thus developed by concentrated practice in a satisfactory environment. *a.* By selecting *environment* as far as possible, the teacher can increase the incentives to practice. *b.* By *concentration* upon the desired trait, the practice will develop the trait more rapidly. *c.* By *practicing* the most effective ways of expressing the trait,

the teacher develops the trait in the particular situations where the trait is most necessary.

All except the first of the factors are fully within the control of the teacher concerned or of the supervising authorities. All factors are useless until the teacher himself is willing to make every effort to develop the trait in question. Desire to develop the trait, however, can be aroused by proper incentives. The selfish teacher who enters a school in which the staff as a whole is unselfish finds it easier to perform unselfish acts than selfish ones. Close association with another teacher who possesses the desired trait is also a powerful stimulus. The supervisor is wise who can recognize the efforts of certain teachers to develop certain traits and who can then provide incentives in the form of special responsibilities, personal encouragement, and tactful suggestions to other members of the staff. A young teacher who is trying to acquire self-confidence can acquire it rapidly if other teachers coöperate in supplying encouragement and praise of his work.

The value of the teacher's practice upon a given trait depends upon how well the trait has been analyzed. Until the antagonistic teacher knows the specific ways of showing friendliness toward pupils, no amount of desire to be friendly is of much use. There are various ways by which the teacher himself can analyze traits into activities that best express them. It is usually wise, however, to have someone else analyze the trait by indicating what the given teacher should do to develop it. It is also important to make use of published studies wherein teaching traits are analyzed somewhat objectively, as in the better type of rating scales.[1]

6. **Studies of teachers' traits.** The problems arising from the teacher's personality are generally studied for two

[1] See Appendix I.

purposes namely, to determine what traits successful teachers possess, and to determine the best means of developing such traits.

The most common and least useful method of selecting important traits is employed by writers of magazine articles on "what makes a successful teacher." The writers draw largely upon their own experience, preferences, and imaginations. The resulting picture is likely to show a teacher in whom the qualities of sympathy, patience, and forgiveness are carried to extremes with little or no emphasis of more positive traits, such as forcefulness, leadership, authority, and sense of humor.

To determine the combination of traits that make for success in teaching is a difficult task by any method. No one pattern will apply to all teachers, of course. Teacher A will be found generous to a fault and will need to develop firmness in his relations with pupils. Teacher B will be found too severe and will need to develop the trait of leniency. Hence all that the research student can hope to accomplish is to determine the traits that make for success in teaching *when appropriately combined*. What combination is best must depend upon the characteristics of the given teacher and of the persons with whom he comes in contact. The teacher's own problem is to "find the combination."

Because the traits selected by anyone in authority are inevitably colored by his own preferences, it is necessary to obtain a consensus of judgment among several competent judges. The trait list shown in Appendix I represents such a consensus. This list was prepared under the direction of W. W. Charters by a method which he has developed to reduce the errors of subjective judgment so far as possible. The method of constructing such a list consists of four main steps.

The first step is to select competent judges to represent the various groups of persons with whom the teacher has professional contacts; namely, school officials, other teachers, parents, and pupils. From thirty to forty judges in all are usually sufficient.

The next step is to interview each of the judges. The judge is asked such questions as "Think of the best high-school teacher you ever knew: what were his or her most prominent traits? What did he or she do to show that he possessed these traits? What traits were conspicuous in the least successful teacher you ever knew? What traits in high-school teachers cause you the most trouble?" Replies to such questions are carefully recorded by the interviewer who is careful to list the various ways in which teachers are said to express the various traits mentioned.

The third step is to throw the traits obtained from the interviews into one list, which may then be reduced to any convenient size. A long list of traits differs from a short list chiefly in that it contains finer distinctions. Since the distinction between two such traits as courtesy and politeness is too fine to have much real importance, these traits would be combined in a short list for practical use. The list shown in Appendix I contains 23 traits which were obtained from an original list of one hundred and eight traits obtained from the interviews.

The final step is to select for each of the traits in the final list a number of activities on "trait actions" [1] by which the trait is defined in terms of conduct. The activities so listed serve both to make clear what the trait means and also to suggest activities that the teacher may practice in seeking to acquire the trait.

There is an extensive literature on the technique of constructing teacher rating scales. Many different devices have been used to select important traits and to determine their relative importance for teachers of particular grades and subjects. The method of selecting the traits is usually to obtain a list of traits from each of a number of judges and then to combine the lists. Another method of selecting the traits is to analyze recorded observations of teaching in order to define the traits more specifically. The traits can then be clearly related to the teaching activities by

[1] See W. W. Charters, *The Teaching of Ideals*. "Trait actions are activities by which a given trait is expressed and which serve to define the trait."

which each trait is actually expressed in the classroom. The disadvantage of this direct analysis lies in the danger of leaving out highly significant traits that are not clearly enough implied by the activities recorded.

A final method of selecting significant traits is the method used to determine the type-difficulties of Section VI. The necessity of restricting the list to a convenient length explains the fact that six traits only are named. If applied without such restriction, the method might perhaps produce a selection of traits more useful to teachers in service than the list appended. The method itself consists simply in having a number of high-school teachers record the teaching problems that they feel to be due to their own personal characteristics. The advantage of the method consists in the fact that only those traits are included that teachers themselves consider important. The traits are accordingly those that teachers desire to acquire. Since no trait can be acquired until the teacher does desire to acquire it, this restriction is important. The disadvantage of a list of traits so prepared is the risk of omitting traits that are considered important by supervisors but not by teachers. The fact that supervisors tend to stress such traits makes it desirable for teachers to acquire them, if for no other reason than to please the supervisor.

7. **Uses of trait analysis.** The different kinds of trait analysis mentioned in the foregoing paragraphs may be used in three ways; namely, as a basis upon which a supervisor may " rate " or judge the teacher's personality, as a means of self-rating by the individual teacher, and as an indication of the sort of practice whereby a given teacher may best develop a desired trait. Brief comment on each of these uses will be sufficient at this point since the uses are illustrated by the case problems of this chapter.[1]

[1] Procedures A, B, and C of Chapter II also apply to the teacher's use of trait analysis.

A list of important traits and appropriate " trait actions " is a necessary basis for supervisory ratings, since each trait can be discussed and evaluated in advance of the rating. When the supervisor has taken pains to present the desirability of each trait listed, has explained the problems that each trait helps the teacher to avoid, and has specified the classroom situations in which each trait is best practiced, the teachers are better able to correct faults of personality themselves. Character traits must be acquired voluntarily to be acquired at all.

Self-rating by the individual teacher is entirely effective in some cases and useless in others. Its effectiveness depends upon the presence or absence of conceit; that is, upon the individual teacher's ability to estimate his own shortcomings. With the trait list as a basis, any teacher will find help in asking a competent friend to rate him on the list in order to check the results of a self-rating by the same list. When such a comparison of judgments has revealed the one or two traits that most need attention, the teacher can concentrate upon such traits until they have been sufficiently developed.

Trait analysis is also essential as a guide to practice. When the teacher can trace certain classroom problems to his lack of interest in individual pupils, for example, his first move should be to select other traits from the list that are closely related, *e.g.*, cheerfulness, coöperation, enthusiasm, fairness, friendliness, good judgment, and open-mindedness. When these have been identified, he may collect the trait actions for each trait and select certain ones for concentrated practice. " Fairness," for example, contains the trait action — " finds good qualities in pupils who are uncultured." The teacher who needs to develop greater interest in pupils might well concentrate upon this activity alone.

8. **Traits essential to efficient teaching.** The personal traits of successful teachers are in general those that make for agreeable

and pleasant relations with pupils. The traits selected on this basis therefore include, but do not sufficiently stress, the traits by means of which the teacher *influences* pupils. As a means of emphasizing these influential traits that help to secure desired responses to instruction they are listed separately as follows:[1]

*Authority* — expressed by careful attention to details, accuracy in the teacher's own speech and writings, criticism of pupils' methods of thinking, concise and accurate explanation, discussing debatable points on basis of facts known to pupils, subjecting doubtful issues to experiment.

*Dramatic sense* — expressed by presenting challenges to pupils' standards, conventional ideas, passive attitudes toward important issues; effective use of humor at appropriate times to relieve fatigue and effort of thought, inducing an imagined experience by word pictures and gestures, keeping within the range of pupils' active interests.

*Good will* — expressed by respect for pupils' ability to reason, doing favors for pupils, leading pupils to feel that the teacher shares their point of view and is one of them, kindly sense of humor, allowing pupils to take part in planning the work, getting the pupil in an affirmative mood to overcome his opposition to a prescribed course of action.

*Vividness* — expressed by keeping within the pupils' limits of attention, by keeping in touch with pupils' reactions as discussion proceeds (circular response), making details stand out by striking and visual descriptions, using terms and phrases that "stick" in the memory, talking and thinking in terms of pictures.

## B. Developing the Teacher's Self-Confidence

1. **Case problem No. 39.**[2] *Miss R came to her present position with excellent preparation for the teaching of algebra and with three years' experience in a small high school. She was slow in making acquaintances and appeared painfully self-conscious both in conference and in the classroom. She failed more pupils than any*

[1] Adapted from a list of 41 "techniques for influencing behavior" described by H. A. Overstreet, *Influencing Human Behavior*. W. W. Norton, New York, 1925, *passim*.

[2] Reported by a principal.

*other member of the department and sent more pupils to the office for disciplinary treatment. Her explanation for the disciplinary cases was that pupils did not pay attention and did not prepare assignments satisfactorily.* (*Type-difficulty VI. A.*)

A visit to the classroom showed that the teacher gave a formal explanation to the group as a whole with little or no attempt to provide for individual interests and difficulties. Her troubles were plainly due to her insistence that pupils "get the subject." Her self-consciousness and self-distrust were caused by failure to establish cordial and effective relations with the class. The teacher is conscientious and industrious and yet apparently fails to recognize the seriousness of the situation. The problem consists in directing the teacher's attention from herself and her subject to the individual members of the class.

2. **Principles selected from Part II that apply to the problem.** I. C (3, 4, 5, 6, 10, 11), G (1, 4), I (1, 4); II. K (1, 2, 5, 7, 8, 9); IV. A (1, 2, 3, 5, 9), B (1, 3, 4, 7); VI. A (1, 3, 4), B (1, 2, 3, 4), E (1, 2, 3, 4), F (1, 2, 3).

3. **Solutions proposed by the principal reporting the problem.** *a.* Request the teacher to make a special study of some departmental problem that will emphasize the futility of formal, group teaching — *e.g.*, the performance of "general mathematics," pupils in the subsequent courses of algebra and geometry. By interviewing each of the four teachers of general mathematics, Miss *R* could obtain a detailed description of the methods each teacher employed. She might then compare the different methods in terms of pupil's success in the later courses. She might then be impressed by the difference between her own formal teaching and the direct application of mathematics to life as stressed by the teachers of general mathematics.

*b.* Chart the distribution of pupils' marks for the previous four terms, to show the teacher how many more pupils she fails

than other members of the department. Discuss the case of each of the pupils whom she has failed and who do satisfactory work for other teachers. A search for remedies in each case should furnish a better perspective from which to judge her own teaching procedure and classroom attitude.

*c.* Follow up such discussion by recommending the study of individual differences in some one class. Results of the Terman Group Test of Mental Ability, the Rogers Prognostic Test of Mathematical Ability, and her class marks might be compared with a summary of pupils' marks in other subjects. The teacher should then see the necessity of providing for the wide differences in the abilities of individual pupils and the impossibility of making all pupils learn the same material at the same rate.

*d.* Assign Miss *R* one section of general mathematics the following term to discourage her practice of adhering rigidly to the logical organization of the subject. Assign her also some work with pupil organizations and discuss methods whereby she can cultivate pupils' interests and friendships.

*e.* If and when the teacher's coöperation has been secured, make explicit " conduct assignments " applying to single phases of her classwork and her direction of pupils' organizations. Reading that is directly adapted to her needs should be recommended in connection with faculty study groups. Definite teaching procedures should be planned in conference for the teacher to apply and report upon. Suggestions whereby she may overcome her antagonism and self-distrust should be followed up by sympathetic supervision. Classroom activities and personal behavior making for cheerfulness, justice, and good humor should be deliberately practiced until improvement is evident.

4. **Criticism of solutions proposed.** The foregoing case problem was selected to indicate a useful supervisory procedure when the teacher is unaware of personal shortcomings. In such cases

the teacher is incapable of self-help except insofar as he is willing to carry out some such analysis of his own procedures as is described in Procedure A (pp. 43 ff.). The resourceful supervisor is the only remedy for defects in personality when the teacher fails to recognize his defects.

Self-distrust may be overcome and self-confidence may be developed like any other trait when the teacher is sufficiently eager to develop it. The tendency to overlook one's own faults is so instinctive, however, that the confidential help of another person is always helpful in planning and carrying out methods of self-correction. Such help should always be sought by the teacher concerned. Gratuitous advice is usually resented. The foregoing suggestions proposed by the principal can be successfully followed by any teacher independently, provided he is willing to adapt each suggestion to his personal needs and work out the application in detail.

### C. Expressing Authority

1. **Case problem No. 40.**[1] *A class in tenth-grade physics is composed of very likable pupils. The teacher has many interests in common with several members of the class and is accustomed to chat with them out of class, play with them on the athletic field, and work with them in pupil organizations, on terms of equality. During the class period this familiarity frequently becomes embarrassing. Pupils do not take serious liberties, but neither do they respect the teacher's authority as such. The result is that only by a considerable amount of argument and persuasion can they be induced to attend to simple matters that should be disposed of by a brief word of direction. Much time is wasted. The teacher feels unable to exert more authority without losing the personal friendliness that alone serves to control the class.* (*Type-difficulty VI. B.*)

[1] Reported by a teacher of two years' experience.

2. **Principles selected from Part II that apply to the problem.** II. E (3, 5), K (1, 8, 9); III. C (1, 2, 3); IV. A (2, 7, 9, 11), D (1, 11); VI. A (1), B (1, 2, 3, 4).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Develop firmness in the classroom whenever matters of instruction are concerned, but encourage familiarity out of class. Keep a record for a week or longer of the situations in which pupils do not respond promptly; then study the situations and plan in detail what might have been said or done to teach respect for authority. Select the more efficient of the procedures and practice them when similar situations occur again. Such procedures might include the following: Be careful to explain the reasons for every group assignment at the time it is made; then tell a pupil who questions the value of a particular assignment that sufficient reasons for doing it have already been given. When a pupil refers to some irrelevant situation out of class, ask him pleasantly what that has to do with the point under discussion. When several pupils are so perfectly " at home " that the atmosphere is more like a clubroom than a laboratory, require a specified amount of work to be completed during the period by announcing the minimum amount in advance.

*b.* Set the class an example of energetic concentration on the work at hand — practice speaking more rapidly and more clearly, adopt a more formal posture in the classroom, avoid all slang and informal remarks, ignore or discourage any remarks by pupils that are not directly concerned with the work.

*c.* Prevent a lazy atmosphere in the class by beginning each period with a snap. Have materials ready beforehand and provide some definite exercise at the beginning that will serve to warm up the class. Keep pupils busy during the period by conducting all work on an individual basis, textbook study as

well as experiments. When a pupil is wasting time, go to him and give whatever directions will increase his production.

*d.* Tell the few pupils who are most casual in class that they are too casual. They will then be more businesslike for the short time required to establish more definite regulations. Such suggestions should be regarded as trait actions and persistently practiced until the desired classroom habits are acquired.

*e.* Watch other teachers to learn their methods of securing courteous and prompt compliance with suggestions. Imitate the manners of older teachers in their relations with pupils. Develop self-confidence in expressing authority by being more firm and emphatic in speech and manner.

4. **Criticism of solutions proposed.** The problem obviously concerns the young teacher to whom personal relationships are often more important than matters of instruction. For this reason there is small likelihood that the development of authority will go too far, except perhaps in a less friendly and congenial class.

The suggestions proposed are satisfactory provided the teacher applies them and persists in the attempt to improve upon them. To concentrate upon the development of a more authoritative manner is not easy. It is wise therefore to secure the help of an older teacher who may help to avoid lapses. The older teacher can be asked to criticize the young teacher's ways of meeting embarrassing classroom situations and may suggest various new ways of expressing authority in other social relationships. Such suggestions should be regarded as trait actions and persistently practiced until the desired classroom habits are acquired.

## D. Developing Friendliness

1. **Case problem No. 41.**[1] *A ninth-grade English class is composed for the most part of foreign pupils who distrust friendly*

[1] Reported by a teacher of two years' experience.

*advances by any person of authority. The general tendency is to regard the teacher as a common enemy. Any pupil's successful attempt to challenge or embarrass the teacher is a sure way to win the approval of classmates.*

*The teacher at first tried to disarm suspicion by doing small favors and making the work attractive. Very few pupils responded; the rest took advantage of any chance to escape work and to ridicule the conscientious pupils. The teacher then tried sterner measures and the response was much better. A direct command produced prompt obedience from those who paid no attention to a polite request.*

*The teacher reacted to this situation by becoming more severe. Deliberate disturbances were quelled by threats or actual punishment which removed the possibilities of securing voluntary and cheerful coöperation. The problem at present consists in finding a way to secure pupils' good will without which efforts to develop interest in good reading and effective writing are largely wasted.* (*Type-difficulty VI. C.*)

2. **Principles selected from Part II that apply to the problem.** I. C (3, 4, 5, 6, 7, 9, 10, 11); II. D (1, 2, 4), K (4, 5, 6, 7, 8, 9); IV. A (1, 2, 3, 4, 5, 6, 8, 9, 10), C (1, 5, 6, 7), D (1, 2, 4, 8, 9, 11, 12), I (1, 2, 4, 5, 7); V. I (1, 3, 5), K (1, 2, 7); VI. A (1, 4, 6), B (1, 2, 3, 4), C (1, 2, 3, 4, 6, 7), E (1, 2, 3, 4), H (1, 2, 3).

3. **Solutions proposed by the teacher reporting the problem.** *a.* Cultivate pupils' friendship gradually and on an individual basis. This will affect the planning of classwork as well as the method of approaching individual pupils privately.

*b.* Take some appropriate occasion to emphasize the fact that the present class attitude is unsatisfactory and that the teacher wants work done on a voluntary basis rather than merely to escape punishment. Then follow this up by applying the principles indicated by the foregoing references to Part II of the text. The classroom procedures introduced should serve three

purposes; namely, to determine the interests on the part of antagonistic pupils that may be directly expressed in readings, writings, and oral reports; to secure coöperation by delegating responsibilities to pupils who are most capable of leadership, and to persuade the class to adopt and enforce some simple code that will make for common courtesy and greater fairness.

*c.* Introduce the new tactics by a private conference with two or three energetic pupils whom the class seems to respect and who are likely to welcome some responsibility. Explain to the pupils that their help is needed in selecting interesting books for class and outside readings. Give each pupil a book or short story to read that is likely to arouse a lively interest. Interview other representative pupils privately and determine if possible their "lines of least resistance." Devote the class period at first largely to the reading of interesting material based on pupils' familiar experiences. Pupils should be given different articles to read and should be challenged to find items that the class as a whole would like to know more about.

*d.* When topics have been found that will hold the voluntary attention of the class, present one topic as alluringly as possible. Avoid appeals to trivial or unwholesome interests, but play up the wholesome excitement found in such books as Rider Haggard's *King Solomon's Mines*, the stories of Richard Harding Davis, and selected stories of adventure by Rex Beach and Jack London. By having pupils compete in the attempt to work out the endings of an interesting plot, to find story materials in newspapers and daily experience, to present important topics of current interest for study and discussion, and similar activities, the general atmosphere of indifference and antagonism should give way.

*e.* Encourage pupils to criticize each other's work as soon as the class has learned to distinguish essentials from non-essentials. Criticism should be used to emphasize the point of an assignment

or discussion and to "break the ice." It should not be used simply "to get pupils to talk." Appoint pupil committees to serve as critics of oral and written work that is presented to the class. Have the judgments of the critics discussed by the class as a whole after the work has been presented.

*f.* Provide opportunity for most, if not all, of the pupils' study to be done in the classroom. The purpose and method of such study should be clearly explained and summarized by directions written on the board so that each pupil may work ahead independently. Indifferent and non-coöperative pupils may then be approached individually — whether to modify the assignment, to stimulate initiative by showing how the work can be adapted to the pupil's interests, to give whatever help is needed, to point out breaches of classroom etiquette, or to reprimand the pupil as the case demands. Whenever the class becomes unavoidably restless, vary the monotony of individual study by group readings and general discussion, oral reports, or by some group exercise in which each pupil takes part in turn.

*g.* Meet cases of deliberate disorder, as a general rule, by a brief rebuke and the statement that the matter will be referred to a pupil advisory committee. Tactful use of such committees appointed by the teacher should serve to establish a code of etiquette for the class as a whole. The code may be written out and posted for general reference. Pupils who persist in their antagonistic attitude should be treated individually and studied in terms of their home environment and relations with other teachers. Until a promising method of approach has been found, such pupils should be treated pleasantly but otherwise ignored except when their attitude disturbs others. Personal peculiarities should receive the same treatment.

*h.* To correct the tendency to be too severe, study the good points of troublesome pupils and talk with them privately about

common interests as often as time permits. Do not monopolize such conversations but listen with apparent interest. Pupils are often more convinced of a teacher's friendliness when the teacher listens than when the teacher talks.

*i.* Share interest in the subject with pupils by praising their work and approving their tastes whenever possible. By giving a pupil the idea that the teacher shares his own preferences for certain kinds of reading and other hobbies, the pupil often reads widely in order to find things " to tell the teacher about " confidentially. Such " secret confidences " may be highly artificial at first and yet develop into special interests of real worth and permanence.

*j.* Concessions to pupil's interests in overcoming indifference should seldom reduce teaching to mere entertainment. Entertain the class whenever necessary to avoid hostilities, but insist on respect for authority. Teach respect for authority by explaining the reasons for all requirements and by prompt disciplinary action whenever reasonable requirements are disregarded. Control the expression of personal feelings at all times in order that authority may be strictly impersonal. Invite pupils to report and discuss any suspicion they may have of the teacher's partiality. Assign marks on the basis of objective evidence, and explain the basis for all marks and other ratings so that pupils may understand them.

*k.* To develop friendliness toward pupils, make a list of the classroom situations in which it is hard to *feel* friendly; then figure out how a friendly teacher should meet each of the situations. The procedures planned in this way may be written out in the form of rules or in the form of questions for self-rating — for example, " Does my manner imply that pupils are doing the best they can or that they are being accused of some fault? Are my tones of voice and facial expressions sufficiently cheerful?

Is my manner of addressing individual pupils strictly impartial? Do I sermonize? Am I too personal in commenting on pupils' behavior? Do I use opportunities to help pupils rather than criticize them?" Such questions may be given to another teacher who is invited to observe the class. The observer's notes on the questions will suggest other important points for which procedures may be practiced until a friendly teaching personality has been developed and the pupils' good will has been secured.

4. **Criticism of solutions proposed.** The problem as stated involves the entire motivation of the course in which the teacher's friendliness is but one factor. The teacher thus did well to include procedures that determine the selection and adaptation of subject matter, even though such procedures are not immediately concerned with the development of friendliness.

The means of developing friendliness, or any other trait, are so largely dependent upon the existing circumstances that criticism here must be confined to generalities. Of the eleven suggestions proposed, the last is undoubtedly the most promising. Any teacher who takes the trouble to make this analysis of the situations in which he does not *feel* friendly, and who then applies the procedures that he considers most efficient in each situation, can scarcely fail to *become* more friendly in the classroom.

An observer's criticism of the teacher's efforts to improve a given trait is equally important. The observer will detect many significant mannerisms unknown to the teacher that can be readily modified when brought to the teacher's attention. The fact that few teachers care enough about improving personal traits to employ such heroic measures, does not in any sense discredit the methods. No teacher can fail to benefit by the frank criticisms of competent supervisors and friends upon his specific weaknesses in personality. It is often true, however, that

the teachers ambitious enough to develop teaching traits by such methods are those who already possess the traits.

### E. Procedure for Problem Solution (I)

The following procedures are proposed for the solution of problems arising from the personal traits of the teacher:

1. Keep a running record, preferably in the form of a diary, of all classroom difficulties that may be due to the effect of your personality upon the class.

2. Go over the list of situations and note the particular trait or characteristic that you consider most likely to have produced the undesirable effect in each situation; — such as absent-mindedness, conceit, sarcasm, shyness, and unfairness (see full list of important traits, Appendix I).

3. Classify together the situations that have been noted for the same trait.

4. Restate the undesirable traits in terms of their opposites — *e.g.*, absent-mindedness — alertness; conceit — modesty; sarcasm — kindly humor; shyness — self-confidence; unfairness — fairness.

5. Study the situations classified under each trait and decide what you think would have been the best way to meet each situation. Write down for future reference such of these procedures as you consider practicable.

6. Show the list of traits to some competent friend or supervisor and ask him to criticize them. The best means of obtaining a helpful criticism is to rate yourself on the traits by marking those traits A in which you think you are no more deficient than the best teacher of your acquaintance; mark the traits B in which you think you are about average, and mark the remaining traits C. Then ask the friend or supervisor to rate you in the same way, without showing him your own rating. The critic

should also be asked to add any other traits in which he thinks you are particularly weak. The two ratings (your own and the supervisor's) may then be compared and the discrepancies noted for discussion.[1]

7. Select the traits marked C by both the critic and yourself. Choose one important trait from this group for special attention. Add to the list of procedures classified under the trait such other ways of expressing the trait as will serve a useful purpose in the classroom; such as, in connection with friendliness asking pupils about their chances of winning the next game. Show the list of procedures to the critic, asking him to improve upon those listed and to add others.

8. Practice the procedures upon all appropriate occasions in the classroom, noting failures and points at which the procedures might be applied more efficiently.

9. If possible, persuade a critic to observe your teaching with the procedures in mind which you are practicing in order to develop a desired trait. Discuss in detail whatever suggestions he may offer either as to better ways of applying the specified procedures or as to other procedures that might develop the desired trait more efficiently.

[1] See W. W. Charters, "How to Develop a Pleasing Personality," *American Magazine*, April 1924.

# PART II

## PROBLEMS AND PRINCIPLES

## DIRECTIONS FOR USE OF THE SUMMARY TABLE OF CROSS-REFERENCES TO TYPE-DIFFICULTIES

The following list of type-difficulties is to be used in connection with the table on page 256. Each of the type-difficulties is here stated in slightly greater detail than in the list shown in the Table of Contents. The present list is intended to show what type-difficulties are closely related. The supervisor or teacher should select from the following list the item most directly involved in the given classroom situation, then select the corresponding type-difficulty on the columns by Roman numeral and capital letter, then read across the table, noting the other type-difficulties at the top of the columns as indicated by checks in the horizontal line being read. Helpful suggestions toward solution of the original difficulty may then be found by looking up the other related type-difficulties on the pages shown below.

### Check List of Type-Difficulties


| | | Page |
|---|---|---|
| | I. *In Use of Subject Matter* | |
| *A.* | How to know the subject well enough to teach it. | 264 |
| *B.* | How to introduce the course or any new material. | 266 |
| *C.* | How to adapt the subject matter to the needs of pupils. | 270 |
| *D.* | How to assign subject matter for study. | 277 |
| *E.* | How to make subject matter coherent for the pupils. | 280 |
| *F.* | How to select interesting and appropriate collateral readings. | 285 |
| *G.* | How to use concrete examples instead of abstract rules. | 289 |
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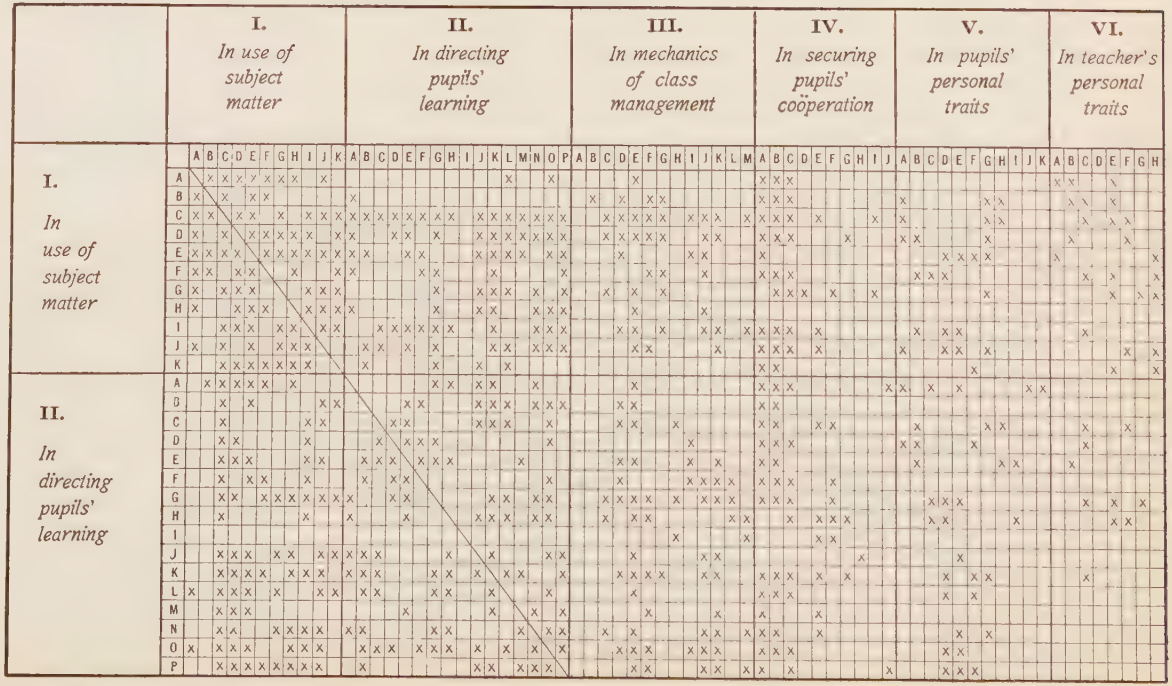
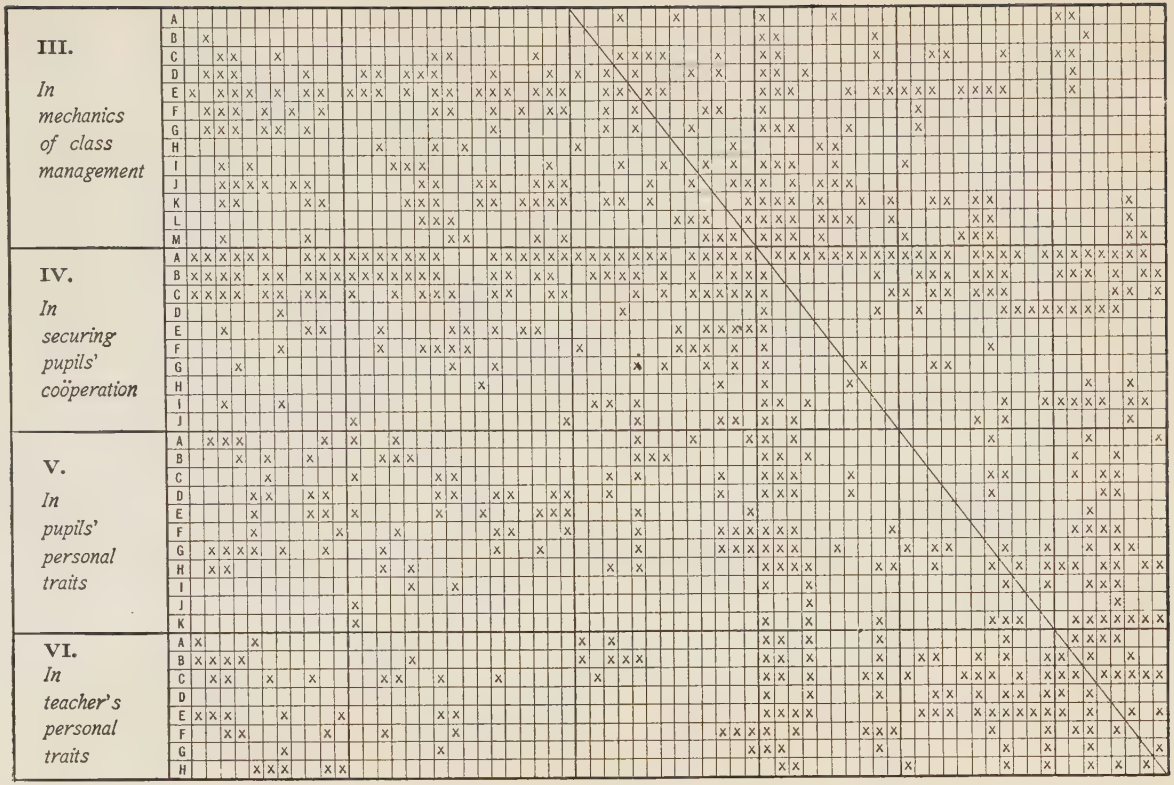
### Summary Table of Cross-References among Type-Difficulties

(Type-difficulties may be identified from the check list (pp. 255–260) by means of the Roman numerals and capital letters corresponding to each on the table.


I. In use of subject matter
II. In directing pupils' learning
III. In mechanics of class management
IV. In securing pupils' coöperation
V. In pupils' personal traits
VI. In teacher's personal traits
I. In use of subject matter
II. In directing pupils' learning


III.
In mechanics of class management
IV.
In securing pupils' coöperation
V.
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VI.
In teacher's personal traits

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## SECTION I

## DIFFICULTIES IN THE SELECTION, EMPHASIS, AND PRESENTATION OF SUBJECT MATTER

### Summary Comment concerning the Type-Difficulties of This Section

*Organize the subject matter of the course into a series of units, each unit being based upon a single principle or problem of genuine importance that pupils can easily recognize in terms of life situations. Select factual and illustrative materials that are useful in developing each unit to the point of full comprehension by the pupils concerned. Emphasize such ideas as are needed to give the particular class a true perspective of each unit. Present each unit in terms of familiar experience, then direct pupils' individual study of the material during the class period by means of standing group assignments and appropriate supplementary exercises.*

The teaching activities included in this section are restricted to the *selection* of subject matter within the limits set by the course of study, to the *emphasis* of certain elements as suggested by the needs of a given class, and to the *presentation* of the subject matter in organized units. The scope of the section does not include the difficulties to be met in constructing a *new* course of study nor the difficulties that arise in showing pupils how to learn the material presented. Difficulties of the latter type are discussed in Section II.

The following comment is based upon two general assumptions. It is assumed that the course of study is not confined to a single

textbook and that the teacher bears the major responsibility for selecting materials to supplement the basic text if any. It is further assumed that the course has been organized into a series of sections or units, each unit comprising a coherent body of material that the pupil can grasp as a whole and apply intelligently to life situations within his experience.[1]

The essential teaching difficulties in connection with subject matter are therefore (1) to become thoroughly familiar with the subject matter to be taught, (2) to select materials necessary to the pupils' adequate comprehension of the unit, (3) to collect whatever supplementary material may prove of particular interest either to the class as a whole or to certain individuals and thereby stimulate the pupils' appreciation of the unit, (4) to select the more significant features of the material that deserve particular emphasis for the given class, and, finally, (5) to present the selected materials in terms of familiar life situations so that the pupils will understand clearly what it is they are to study in detail during the class periods to follow. It is assumed that a major portion of each period is devoted to the directed study of the materials so selected and presented.

Difficulties arising from the teacher's inadequate command of subject matter are persistent and troublesome. A teacher cannot make good his deficiencies without first finding out what they are, and they are often hard to discover. Wide reading and conversation with others well read in the given field, help the teacher both to become aware of his limitations and to remove them. The difficulty is of course most serious when the teacher is asked to teach subjects that he is not prepared to teach. The only effective remedy here is to enroll for systematic courses in a local college or to study correspondence courses. When conditions prevent even correspondence work, the best substitute is

[1] For further description of units of subject matter see pp. 27, 88 ff., and 120 ff.

to combine regular study of the basic texts in the field with wide reading in more popular literature. Conversation with persons well informed in the subject gives the teacher the ability to discuss it, which reading does not give. Conversation also gives practice in organizing knowledge in terms of the topics discussed. The combination of reading and conversation helps the teacher to secure a more coherent grasp of the subject matter of the course, it widens the teacher's acquaintance with collateral reading, gives him increasing independence of the text, furnishes abundant illustrations for use in making explanations clear, and makes for his own sincere appreciation of the subject. The teacher must first secure this command of the subject before it can be transmitted to the class.

The above paragraph applies to the problem of improving the teacher's command of the subject as a whole. It is no less essential for the teacher to command the details of the particular unit by specific preparation of the material to be presented. Command of the subject in its wider aspects is no substitute for command of details. The teacher's preparation for the first meeting of the course or unit should be sufficiently thorough to arrive at a definite plan for the work to be undertaken and for the methods to be employed in presenting it.

The presentation should employ concrete illustrations, carefully chosen from the field of pupils' familiar experience. One well-selected example is more helpful in presenting new material than a full period of abstract explanation. The presentation should also deal specifically with those phases of the material that the class is likely to find troublesome, hence the class should be tested, whenever possible, to discover the troublesome points in advance. Tests should also follow the presentation of new material in order to locate points that the class has failed to grasp. Material that needs to be further explained, or presented

in a different way to part of the class, should be as carefully prepared as material presented for the first time. Preparing material for explanation to a few pupils should be easier because of the smaller audience. It is, however, equally important, since these pupils who require additional explanations are likely to obstruct the course later unless sufficient pains are taken at the beginning of the new unit to clear up their specific difficulties as they arise.

### Type-Difficulty I. A [1]

### Teacher's Command of Subject Matter

**Summary statement of principles.** When the teacher's command of subject matter is inadequate, he tends to select bookish and formal material that pupils cannot apply to ordinary life situations and that they accordingly feel to be useless. Acquaintance with the subject not merely as it is written but as it is lived and applied, is essential in adapting subject matter to the needs of the class and in avoiding artificial classroom situations. The evident relation of one assignment to another and the coherence of all units of the course should reflect the teacher's clear perspective of the subject as a whole. The same perspective should govern the selection of collateral reading and prevent selection of references that neither supplement nor round out the unit as it appears to the pupil. Pupils' difficulties in understanding the text require the teacher to collect helpful illustrations and to use them freely in interpreting the text. Without this attention to illustrative examples, it is difficult for a teacher to make explanations adequate. Too much explanation is as confusing as too little. The right amount can only be determined by the class response, by appropriate tests immediately following the explanation, and by well-organized reviews of the unit.

[1] Related type-difficulties: *Section* I. C, D, E, F, G, H, J. *Section* II. L, O. *Section* III. E. *Section* IV. A, B, C. *Section* VI. A.

Command of subject matter has much to do with establishing a coöperative atmosphere in the classroom. Disrespect for a teacher is almost certain to follow the discovery that he does not know his subject. Emerson remarks that there is no more pitiful sight than that of a teacher attempting to teach what he does not know. The teacher's efforts to master the material to be presented have their reward in the pupils' greater initiative in following up suggestions, and closer attention to work.

Beginning teachers have seldom acquired the familiarity with any field of learning that should constitute the minimum requirement for high-school teaching. Such familiarity is acquired slowly. Its acquirement is greatly aided by the combination of systematic study and persistent efforts to apply the principles of a given subject to the pupils' every-day experience. Skill in making clear applications does much to increase the teacher's self-confidence.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (I. A)

**1. How to " study-up " a subject in which previous training has been meager.**

By taking courses in residence or extension classes at local institutions, by enrolling in correspondence courses when offered by reputable colleges with a strong faculty in the given department, by attending summer school classes, by independent study of basic texts, by searching for materials in books and periodicals that high-school pupils can understand, and by systematic discussion of such reading with well-informed acquaintances.

**2. How to obtain perspective of a high-school subject that college courses have not " covered "; — as when a teacher of general science has been well trained in chemistry and biology but has done no work in physics.**

By selection and combination of the types of study listed in No. 1, and particularly by reading semi-popular literature written by recognized authorities in the field.

**3. How to prepare for a given unit so as to see and teach it in relation to the course as a whole.**

By listing the desired outcomes or life situations to which pupils should be able to apply what they learn in the course and taking pains to see that the material included in each unit is related specifically to one or more of the situations or outcomes.

**4. How to prepare for the work of a given period so that all essential facts are held in mind.**

By listing the difficulties that pupils are likely to meet in the work of the period and preparing such explanations or exercises in detail as are likely to remove the difficulties. Except in presenting new work to the class as a whole, the essential facts that need to be explained cannot usually be determined in advance.

**5. How to collect experiences from daily life that serve to reinforce and clarify the subject matter.**

By careful supervision of pupils' notebooks, by clipping appropriate items from periodical reading, by noting neat illustrations suggested by daily preparations and observation, and by asking other successful teachers to suggest illustrations that they themselves use to advantage.

**6. How to become familiar with life applications of textbook material.**

By conversation with persons who make constant use of the given subject in their daily occupations, such as journalists, accountants, politicians, tradesmen, and engineers.

## Type-Difficulty I. B [1]

### Introducing the Course or Unit

**Summary statement of principles.** The success of the first meeting with a class depends upon the clearness and correctness of the impressions which the pupils carry away. When the impres-

[1] Related type-difficulties: *Section* I. A, C, E, F. *Section* II. A. *Section* III. B, D, F, G. *Section* IV. A, B, C. *Section* V. G. *Section* VI. B, C, E.

sions of the work to be undertaken and of the teacher's personality are both definite and reliable, many difficulties are avoided in the succeeding work of the course. To make first impressions definite and reliable is by no means easy. The difficulty consists in deciding what points should receive major emphasis. The points which deserve this emphasis can only be determined on the bases of the purpose of the course and the needs of the particular class.

In selecting points for emphasis at the first meeting, coherence is of prime importance. Unless the ideas presented are so closely related as to give a single impression, they are likely to confuse. The teacher must consequently have complete command of the subject matter. Details should not be introduced except for purposes of illustration, and any details that are introduced should be obviously consistent with the general principles presented. When collateral reading is referred to, the references should be followed by sufficient comment to give the class some idea of their contents. Mere titles are likely to arouse much unnecessary apprehension.

To make pupils' first impressions contribute toward a coöperative classroom atmosphere, it is necessary to adapt the work to the needs of the class and to make it apparent that this adaptation has been made. Both the adaptation itself and the method of making it apparent require careful planning. The adaptation involves the following activities, among others: (1) the preparation of a seating plan or other device to facilitate the learning of pupils' names; (2) some preliminary testing to diagnose the interests and abilities of the class, particularly to identify pupils whose abilities are uneven and whose attitudes are peculiar; (3) the preparation of self-explanatory outlines for distribution to each pupil, to give a bird's-eye view of the work to be covered and also to suggest projects appealing to individual initiative; (4) such

conversational questioning as will tend to develop a social atmosphere and indicate the pupils' attitude toward the work; (5) and the assignment of work to be done in class, which forms a helpful supplement to the explanations presented. This illustrative assignment should be based upon some experience familiar to the class that demonstrates the usefulness of the subject matter.

The teachers' traits that are perhaps most essential in the successful introduction of a course or unit are self-confidence and authority, a friendly attitude toward the class as a whole, and an evident interest in individual pupils. Interest in individual pupils may be expressed in the discussion of pupils' experiences related to the course. The first meeting should provide time for such discussion.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (I. B)

**1. How to hold attention and arouse interest in the course at the first meeting of the class.**

By giving pupils something definite and interesting to do. This implies the selection of some problem, incident, story, picture, or other illustrative material that is sufficiently familiar to the pupils and that can be used to demonstrate the sort of work to be done in the course; for example, a vocabulary or silent reading test, a broad question with an interesting implication that the class may discuss either orally or on paper; or a simple problem, as in science or mathematics, that may be worked by the class and discussed. Attention is partly held by the teacher's efficiency in attending to the details of class management. Interest should be aroused by the novelty of the work. Interest is sustained by the pupils' success in whatever activities are chosen by the teacher as a means of learning the new material, — *e.g.*, oral reports, discussion of course outlines, and the solution of problems.

**2. How to plan the first laboratory exercise.**

If the teacher has previously explained such matters as the location and arrangement of materials, the assignment of tables and lockers, and the

general routine best adapted to the given facilities, the first laboratory exercise should ordinarily consist of a simple demonstration by the teacher in which certain pupils are invited to assist. This plan provides for instruction in the details of laboratory technique and prevents the inquisitive fooling with materials that often establishes a spirit of horse-play in the laboratory. The procedure of the demonstration should be planned in detail and followed up by an exercise for the entire class, such as the direction to describe what the teacher did, step by step; to state the results of the experiment, and to explain these results as fully as possible on paper.

### 3. How to introduce a new textbook.

By one or more of the following procedures, or others which the preface of the particular textbook or the teacher himself may suggest: (*a*) listing a number of specific questions to which answers may be readily found by correct use of the index and table of contents; (*b*) raising the question as to what sort of material might be included in a textbook on the given subject, listing those suggestions on the board, and then comparing them with the table of contents; (*c*) giving the class a simplified review or abstract of the book by summarizing and illustrating its purpose and principal features, describing its organization, emphasizing the "study helps" and other matters that pupils tend to overlook, and reading selective passages with comment; or (*d*) passing out the book to the class, asking them to examine it and to note its attractive and unattractive features for later comparison and discussion.

### 4. How to make pupils want to study a new unit.

This difficulty is obviously too broad for adequate treatment in short space, since it involves the entire problem of motivation. (See Section IV.) Insofar as the selection and presentation of subject matter are involved, the pupils' desire to study a new unit results from curiosity aroused by the teacher's statement of what the unit contains and by their present interest in the ideas suggested by the teacher's illustrative examples. The teacher's advance description of the unit should accordingly be written out in advance to make sure that unnecessary and confusing details are omitted, that effective illustrations and sample problems are included, and that the whole description is coherent and suggestive of interesting study.

**5. How to find pupil-experiences that help to make the content of the course or unit seem familiar.**

By directing pupils to keep notebooks in which appropriate experiences are recorded as they are met or recalled to mind, by setting a period aside in which pupils are asked to make a list of their experiences that have to do with certain topics, by conferences with certain pupils whose home environment has contributed something to the work of the course, by interviewing other teachers of the subject, by checking pupils' voluntary reading, by examining special method literature, and (in certain subjects) by observing and conversing with pupils informally, as in "club" meetings. It is a profitable study for the teacher to compile as many relevant situations as can be collected in order that the list may be given to a class to check. In this way the teacher can readily locate appropriate experiences familiar to the class that can be used to exemplify and illustrate a given topic.

## Type-Difficulty I. C[1]

### Adapting Subject Matter to the Needs of the Class

**Summary statement of principles.** The number of specific difficulties listed below suggests that this is the largest of the type-difficulties in scope. The successful adaptation of subject matter to individual needs is an activity almost as broad as teaching itself. The following comment therefore is restricted to various methods that may be used by teachers both to discover pupils' needs and to relate subject matter to the needs thus discovered.

Before methods of collecting data from a class can be successfully applied, it is evident that the teacher must have an adequate command of the subject. Failure to apply subject matter to pupils' needs is caused as frequently by the teacher's superficial knowledge of the subject as by ignorance of pupils' needs or unwillingness to make the effort to provide for them. A familiar

[1] Related type-difficulties: *Section* I. A, D, E, I, J. *Section* II. A, B, G, H, K, N, O. *Section* III. E, G, J. *Section* IV. A, B, C.

criticism of academic knowledge suggests that any knowledge of a subject is superficial when confined to books about the subject. The knowledge gained from books is seldom sufficient to enable a teacher to translate the subject into useful pupil experience.

The classroom procedure most directly involved in adapting subject matter to pupils' needs is the assignment. The assignment tells pupils what they are to do with a given unit of subject matter as a means of learning it. If the material is learned in the most useful way, it must be learned in the way in which it will be used. Assignments can seldom be successfully planned until the teacher knows how the subject can be used by the pupils concerned. To find out how the class can use the subject matter most profitably, the teacher should make a list of possible applications and select the most important.

It is essential that successive assignments be coherent. Assignments should be so related as to increase command of the subject as a whole. Progress in one phase of a subject should make for progress in other phases when the subject matter is well organized. Interrelation of assignments tends to clarify explanations. What pupils need to have explained is seldom known until the pupils have begun work upon the assignment. Explanations can then be directed at the points of difficulty.

In planning assignments, much help can be obtained by skillful questioning. It is assumed that most assignments will be studied during the class period, in order that pupils' difficulties may be more readily found. When the work is in progress, a well-phrased question will reveal misunderstandings both of individuals and of the class as a whole. The teacher's skill in questioning the pupil about his methods of work determines how far the pupil's difficulties can be discovered.

Oral and written exercises help the teacher to discover pupils' needs when pupils apply their personal experience to the subject

matter. When the pupil is given plenty of time to organize his own reading and experiences, he has an excellent opportunity to discover what he does not fully understand. By this discovery he may make his own adaptation to the subject matter. The teacher's primary function is to assist this process by directing pupils' study toward the particular difficulties confronting them. Drill and review exercises should be planned from the same point of view; that is, no formal exercises should be set for the class as a whole until the teacher has located difficulties that confront a majority of the pupils and which the exercise may remove. The value of class exercises depends upon how much they help pupils to overcome difficulties that the pupils are conscious of in attempting to master the unit.

Merely to mention the above procedures suggests the necessity of a coöperative classroom atmosphere before they can be successfully applied. When the teacher's willingness to adapt the course to the pupils' needs is sufficiently evident, pupils are the more disposed to coöperate. The encouragement of individual initiative, by allowing substitution of individual projects for work that certain pupils do not need, tends to increase the attention and industry of the class as a whole.

### SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (I. C)

**1. How to determine what parts of the course are most useful to a given class.**

To answer this question in full would require an exposition of the present practice of curriculum construction. As representing a classroom difficulty, however, the problem may be confined to the selection of the more useful items from material already contained in the particular course of study. It is assumed that the course as previously taught is capable of being divided into sections or units, each unit representing several days' work, in connection with a single principle or problem. Each such unit should possess obvious value for the given class.

Briefly outlined, the steps to determine the relative usefulness of topics that may be included in a given unit are five: (*a*) list the topics in detail; (*b*) list in a parallel column certain life-situations to which each of the topics may be applied by the pupils; (*c*) group the pupils of the class according to the sort of application most useful to each group, for example, vocational applications for early leavers; applications to personal hobbies, reading, and general experience for pupils who will complete high school, and applications to later study for pupils intending to enter college with professional ambitions; (*d*) rank the situations in order of relative usefulness to each group of pupils; and (*e*) select the topics of subject matter corresponding to the situations which have been assigned high ranks for a majority of the groups considered. (See bibliography.) The situations thus selected as important may also be used to give concreteness to the teaching of the topics.

**2. How to determine what parts of the course are most difficult for a given class.**

Most efficiently, by observation of individual pupils at work and by recording the difficulties met. Difficulties may also be collected by interviewing other teachers of the same course or subject and asking them to check the topics considered more difficult from a list of representative topics. After the material has been once covered by the class, relative difficulty may be determined by testing. The points missed by the larger number of pupils are presumably the more difficult if all pupils have had the same opportunity to learn the material.

**3. How to use information concerning the individual members of a class in simplifying the more difficult parts of a course.**

No positive suggestions can be offered toward the solution of this problem until the "more difficult parts of the course" are specified. Information concerning pupils' familiarity with certain life-situations and with other school subject matter that may be used to explain the material prescribed, can of course be used to good advantage. Occasionally to know that certain pupils are not likely ever to use certain parts of the course makes it possible to substitute other more useful material. Otherwise the best means of simplifying difficult material is to omit any non-essential details. Clearness in outlining, in illustration, in relating the difficult items to the basic idea

of the unit, and in other phases of presentation is the best means of removing difficulties. It is helpful to find out how well the pupil succeeds in other courses by consulting other teachers. If the difficulty is due to individual characteristics, the case would determine the procedure.

**4. How to determine the extent to which certain types of material need to be emphasized; *i.e.*, how well each topic must be learned.**

The extent to which certain types of material need to be emphasized depends upon how satisfactorily the course has been organized into units, as elsewhere defined. When each unit embodies a central idea of real importance to which explanatory reading and exercise materials have been related, the points needing emphasis can be selected on the basis of their contribution to a full understanding of the unit. It is clearly important for the teacher to construct tests to show when this central principle of each unit has been sufficiently grasped. When the tests show that certain pupils have not grasped certain implications of the unit because they have not given proper attention to a certain type of study material, it is clear that this material should receive more emphasis for these pupils.

**5. How to simplify a given topic to the mental level of a given class.**

By finding some objective evidence to show what the "mental level" of the class is. Presumably by "mental level" is meant the pupils' ability to understand the material to be presented. Unless the teacher knows what the class already understands about the relation of a topic to the central idea of the unit, it is plain that the new topic cannot be effectively presented nor can the teacher intelligently direct the pupils' study of the material. To determine what a majority of the class already knows about the topic, some form of pre-test is useful. This may consist in directing pupils to write what they know of the topic before it has been presented, or it may consist of a list of facts or questions relevant to the topic from which pupils check those items that are somewhat familiar.

**6. How to determine the amount of new material to be presented in a given period.**

By experimenting with the given class. The first presentation of a unit should be prepared with sufficient care to eliminate all details which do not add to the clearness of the central idea. In such presentations a time limit of twenty minutes helps to eliminate unessentials. After study of the new unit is under way, the rule of one-thing-at-a-time should meet the difficulty.

**7. How much should the teacher emphasize material which he considers " dry."**

If by "dry" is meant unimportant, the answer is, not at all. If the teacher feels that the material is important but uninteresting to the class, he should choose whatever other material serves the same purpose and has greater intrinsic interest. He should also, of course, do his best to invent or to discover ways of arousing interest in the material.

**8. When the interest of a class has, with much effort, been aroused in an important topic, how far is the teacher justified in remaining with that topic beyond the allotted time?**

Only for such time as may be necessary to transfer the interest to other related topics of equal or greater importance. It is assumed that the class has grasped the material sufficiently well within the time allotted. Otherwise more time should be taken.

**9. How to present particular topics with neither too much nor too little detail.**

By making it a rule to present no material to the class as a whole without some evidence to indicate that most pupils need it, as when the immediate purpose of the explanation is to clear up a particular difficulty met by a majority of the pupils. No more detail should be introduced in such explanations than is necessary to make the principle clear. Demonstrate the solution of the difficulty as applied in a concrete instance, state the principle or method of solution, and continue with such further illustrative applications as may be necessary to clear up the difficulties of individual pupils or groups. In presenting new material the right amount of detail is best determined by experiment followed by suitable tests.

**10. How to present abstract principles in concrete terms when the pupils vary in their ability to see the significance of the concrete illustration.**

By systematically selecting illustrations corresponding to the range of abilities and degrees of familiarity with the given principle. Any principle of importance may be illustrated by situations of various sorts, of which the more familiar ordinarily make the better illustrations. The teacher should continue with illustrations until all the pupils grasp the principle.

**11. How to present material to particular types of pupils.**

By experimenting with various methods of presentation as applied to pupils of each "type." Since the difference between methods available is largely a matter of the amount of explanation given, it is convenient to classify pupils on the basis of experiments as those who respond best when told to work on their own initiative, those who need specific directions in methods of attack, and those who seldom grasp the material until the teacher has demonstrated and explained it in detail.

**12. What emphasis of prescribed subject matter is desirable for pupils who must leave school early to earn money?**

Pupils who leave school shortly after the completion of the course should be allowed to disregard whatever details of a given unit are only useful in further study of the subject. Time thus saved should be given to study which will contribute more directly to the pupils' use of the subject in private reading, vocational applications, and general social situations.

**13. What departure from the time-schedule is justified in the case of an unusually slow class?**

Efficient teaching of any class should regard a time schedule as a sign post but never as a definite restriction. Sufficient time should be taken to give all normal pupils a useful command of the unit, as shown by unit tests.

## Type-Difficulty I. D[1]

### Making Assignments

**Summary statement of principles.** The assignment makes plain to the members of a class what should be done with the subject matter in order to learn it. The assignment is thus one factor in teaching which adapts the given material to the needs of the class. Unless the assignment is made with reference both to the material and to the pupils' needs, the material will not be well adapted. By pupils' needs is meant their present or future opportunities to use the material selected, their abilities and disabilities in learning the material in particular ways, and their understanding of different types of subject matter.

Assignments should be planned for a unit as a whole. When the general plan of work has been laid out for the entire class and outlined in some form of guide sheet, the procedures to be applied to parts of the unit and to certain pupil groups that require special treatment may be planned in greater detail.

The value of oral recitations and exercises to the pupils performing them is usually greatest when what is said is unfamiliar to the rest of the class. The few exceptions to this rule are found chiefly in foreign language and " expression " classes where oral drills are necessary to train the ear to recognize slight variations. With these exceptions, oral recitations should be assigned, and assigned far enough in advance and in sufficient detail, so that the pupil reciting may be expected to contribute something of his own which the audience considers worth listening to. Written exercises may be assigned whenever the teacher wishes to secure a thoughtful reaction from each pupil to a problem situation.

Assignments should serve the further purpose of interrelating

[1] Related type-difficulties: *Section* I. C, E, F, I. *Section* II. A, G, J, K, L, N, P. *Section* III. E, G, J. *Section* IV. A, B, C.

the different elements in the work of the course. Assignments covering an entire unit should apply specifically to the units preceding and prepare for units to follow. Assignments concerned with stages or steps in the given unit should integrate each step with the central principle of the unit. Assignments to particular groups of pupils should grow out of the teacher's supervision of individual study and apply to the difficulties observed. Assignments of drill exercises should similarly be based upon difficulties or deficiencies revealed by tests.

Class assignments should ordinarily be recorded in pupils' notebooks, unless distributed on mimeographed sheets. Mimeographing is decidedly preferable in the case of unit assignments. Individual or group assignments, which are determined by the difficulties arising, should invariably be recorded in notebooks. The notebooks are thus of real assistance to the teacher in preparing tests and to the pupil in making reviews.

The assignment helps to develop a coöperative atmosphere. Assigning different projects to different pupil groups, tends to make the class work a coöperative enterprise and stimulates individual initiative. The comparison of notes following the completion of such coöperative assignments should receive close attention and tends to secure it.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (I. D)

**1. How to determine the amount of work to be assigned for the next class period and how to relate it with what has gone before.**

By planning and making assignments to cover the work for an entire unit representing several days' work. The supplementary assignments or directions for daily work should then be related to each other because all are related to the unit assignment. As a practical matter it is usually impossible to assign any amount of work to be done *out* of class with the expectation either that it is the right amount or that the work will receive proper attention at home.

**2. How to make assignments such that pupils will complete them on time:**

By requiring and allowing pupils to study in class, and by making home work entirely voluntary. In certain subjects and for those pupils who have learned how to study independently, this rule may be modified to allow work begun in class to be completed at home.

*a.* **How much variation in amount of home work completed is to be expected of the normal ninth-grade class.**

The widest variation.

*b.* **How to meet the situation presented by the pupil who comes habitually unprepared.**

Pupils will be "prepared" if class periods are given over to directed study. The question is, prepared for what? Preparation for a formal recitation is less important than preparation for intelligent use of the material learned.

**3. How to increase the value of outside study by the selection of work to be done and by presenting directions for doing it.**

Outside study should be voluntary at first and until pupils have learned how to study. Thereafter such work may be selected which pupils can perhaps prepare to better advantage outside the classroom with whatever directions the teacher considers necessary.

**4. How to check understanding of assignments before pupils start to prepare them.**

By having pupils begin work on the assignment in class, and by checking the work to discover whether any pupil does not understand what is to be done. Work begun in class can be examined and failures to understand the assignment can be directly observed.

**5. How to assign material that is intended to develop appreciations.**

By selecting the material with reference to the present interests of the class and inviting the class to read it in order to tell you whether they find it interesting. No formal exercise should be assigned if sincere appreciation is the desired outcome. Pupils must, however, understand the purpose of the material.

**6. How to vary the form of assignment in such manner as will arouse the greatest interest and meet individual needs to the fullest extent.**

By basing short assignments upon the specific difficulties met in the attempt to carry out the unit-assignment. This practice should provide for individual needs. Interest will be aroused by the variety of assignments thus made and should be intensified by attention to illustrative examples. The literature of general method contains numerous devices for use in giving variety to assignments.

**7. How to assign material that is intended to stimulate reflective thinking.**

By selecting a problematic situation, — that is, a situation within the pupils' experience which presents an issue that the pupil has to decide. Explain clearly on what grounds the decision is to be made and how the pupil may find out what he needs to know before he can decide wisely. Then present directions which the pupil may follow in checking the correctness of his decision.

## Type-Difficulty I. E [1]

### Making Subject Matter Coherent

**Summary Statement of Principles.** The primary purpose in *organizing* any course is to make the subject matter coherent. The name of the subject, the titles of courses within the subject, the titles of units composing the course, and the topics studied

[1] Related type-difficulties: *Section* I. A, C, G, I, J. *Section* II. A, B, J, K. *Section* III. E, J. *Section* IV. A. *Section* VI. A.

in connection with each unit are designed to emphasize relationships between these different elements of the subject. It is important, however, to distinguish clearly the organization of subject matter that best unifies the subject matter in the mind of an educated adult from the organization that best unifies the subject matter in the mind of the immature pupil. The same organization of subject matter is seldom the best for both. The coherence of subject matter in a high-school course depends as much upon the pupils' habits of thinking about the subject as upon the logical classification of the facts themselves. Hence, effective units of subject matter can only be defined by experiment to determine what the pupils' habits of thinking about the subject are. The topical organization of history, for example, has been found more effective for high-school pupils than organization on a strictly chronological basis.

To organize effective units of work, the teacher's own command of subject matter should be complete, both in scholarship and in familiarity with life applications of the subject. Otherwise the materials will lack coherence for the pupils. In presenting subject matter to adults it is the abstract rule or principle that makes for coherence; in the case of pupils the concrete example is often better. Hence experiment is necessary in selecting those examples that will clarify the pupils' understanding of principles. The value of some forms of project consists in the coherence that a well-chosen application gives to related principles which do not at first seem to pupils to be related at all.

There is the same need for coherence in explaining incidental difficulties encountered by groups of pupils or by individuals. Unless the teacher makes the sort of explanation that will clarify the point at issue and also relate it to the larger units of which it forms a part, the explanation is not entirely successful. The emphasis of a minor point may easily be overdone. Too great

emphasis of any element in a unit tends to weaken the coherence of other elements.

The use of questions in discussing subject matter with an entire class is a potent means of either securing or destroying coherence of subject matter. It is possible for the teacher who is a skillful questioner to give just the right degree of emphasis. It is far easier to side-track the pupil's thinking so completely by inappropriate questions that he loses time in regaining his perspective of the unit. This danger is very slight when the questions are addressed to one or two pupils; it is very great when the questions are addressed to a larger group, since the same questions may produce the desired effect upon some pupils and a very different effect upon others. *Individual* questioning, like individual direction of study, is a more effective means of interrelating the work of the course. For such individual guidance to be economical and efficient, the purpose of each unit should be fully understood in advance.

The " mechanics " in directing individual work may likewise add to or detract from the coherence of subject matter presented. This applies especially to outlines, guide sheets, and similar material prepared by the teacher as a basis for individual directions. A list of directions for study, for example, should be supplemented ordinarily by notes to show how the given directions apply to the particular unit. The teacher's choice of times for the giving of individual directions, the amount of explanation given, the manner of giving or withholding it, and similar routine activities are likewise important, since they may draw the pupils' attention from the coherence of the unit to a point of minor importance.

A coöperative spirit on the part of a class makes for coherence of subject matter in that the basis for such coöperation is a clear idea of a common purpose. When all pupils are working to the

end that the unit is planned to reach, the interrelation of different topics is emphasized by their common relationship to the central idea of the unit. In the case of timid pupils who lack initiative, this coöperation is more difficult to secure. In attempting to secure it the teacher may safely experiment with the foregoing suggestions.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (I. E)

**1. How to add meaning to a given course by relating it to other courses in the pupils' programs.**

By finding related topics in other courses as suggested by other teachers. Also by encouraging pupils to apply material from other courses to the given course. Such applications are appropriate in written reports upon the unit, class discussions, oral reports, and supplementary papers by individual pupils.

***a.* How to relate the course to courses in English composition.**

By insisting upon clearness and effective organization in all reports both written and oral. By supplementing the instruction of English teachers with definite exercises in English form as applied to material in the other subject. By refusing to accept papers when ideas are carelessly expressed. By conferring with English teachers and submitting a list of topics upon which your pupils should have ideas to express in their writing for the English department.

***b.* How to capitalize the pupils' interest in extra-curricular activities.**

In those few instances where the interest can find legitimate expression in the class work, allow the pupil to supplement the teacher's presentation by discussing the topics with which he is familiar. Such contributions are less likely to divert the rest of the class if written up in the form of a supplement to the materials for study in connection with the given topic, — *e.g.*, "How to be a fair umpire" in connection with "legal justice" in a civics course.

*c.* **How to utilize the information concerning particular points that pupils have picked up in other courses.**

By establishing the custom of calling for such information whenever it is relevant and at appropriate times, as, for example, at the beginning and close of the unit.

**2. How to supply "background" other than by assigning special topics for individual reports.**

By the selection of readings for class study. The purpose of such readings is primarily to supply the "background" necessary for the full understanding of the topic. The more such references appeal to the class as worth reading in themselves, the better.

**3. How to interrelate the preceding topics of the course.**

By systematically including references to previous topics in class discussions, review exercises, and tests, when appropriate. By asking pupils to make outlines showing the unity of the course as they proceed.

**4. How to deal effectively and tactfully with the variety of methods (of outlining) which the class has been taught by former teachers (of English).**

By developing a method or form that you consider adequate and having it criticized by other teachers of good judgment. Then teach this one method to the class. The teacher need never imply that methods taught by other teachers are not good, but simply that the new method is more appropriate to the present work.

**5. How to relate an academic course (like geometry) to pupils' every-day experience, thereby securing coherence.**

By collecting applications of each unit to life situations and using these applications to illustrate the principle. The situations may be found in books and articles dealing with methods of teaching the subject or collected by interviews from other teachers, pupils, and persons who have occasion to use the subject in their regular work.

**6. How to make the work of the period coherent.**

By relating all activities of the period to a single purpose, as far as possible. Oral discussions and recitations should be summarized on the board at the close of the period to show what has been accomplished and how it is related to the original purpose of the period and of the unit as a whole.

## Type-Difficulty I. F[1]

### Collateral Reading

**Summary statement of principles.** Collateral reading serves two somewhat different purposes: to widen the pupils' range of information and to develop his interest in reading as such. The former purpose is ordinarily served best by stocking the classroom with appropriate reading materials and allowing pupils to devote class time to collecting information from the references in connection with particular topics. Interest in reading is usually best developed by a system of conferences with small groups of pupils wherein the teacher may informally and somewhat casually describe books that he thinks pupils will enjoy. After certain books have been read, the conference period should be used for discussion of the pupils' reactions and recommendation of other books that the reactions suggest. The aim of the conference is to develop such candid and sincere criticisms by pupils that other pupils will want to read any book well recommended.

To accomplish either of these purposes the teacher himself must be well-read. He must be familiar not merely with the standard authors in the field but with writings of a popular sort from a wide variety of sources. In presenting the course as a whole or a new unit of work, the teacher may refer to collateral reading in such terms that the reading is regarded as an inviting opportunity. The same reference will not make the same appeal

[1] Related type-difficulties: *Section* I. A, B, E, K. *Section* II. A, F, G, K, P. *Section* III. F, G, J. *Section* IV. A, B, C. *Section* V. B, C, D. *Section* VI. C, H.

to all pupils, of course; but it should attract certain pupils if the right material is recommended and if the teacher's description is neither too lengthy nor too brief and is well illustrated.

The difficulty of making subject matter coherent arises in connection with collateral reading. The remedy for incoherence is to make the pupil responsible for relating the reading to the topic. Reactions to reading in terms of the topic clarify the pupils' understanding of the topic as such, and help the teacher to eliminate those readings which pupils cannot relate to the topic.

This same procedure is useful in forming sincere appreciations of the material read. When pupils try to explain the bearing of class readings on the topic, they are likely to evaluate the reading with considerable care. Appreciations as such are perhaps most directly formed by incidental recommendation and discussion of readings in the small group conference.

It is difficult to assign collateral reading to the entire class group. Individual assignments are usually more effective, since the pupil can be made to feel that he is assisting the group as a whole by covering and reporting upon certain references. Individual assignments are usually suggested by the interests and difficulties that arise as the pupil works through the unit. Oral reports and recitations are excellent occasions for group discussion of individual reading assignments. When effectively summarized by the teacher they offer a strong incentive to other pupils to read the references themselves. Occasional remarks by the teacher concerning books that individual pupils have read is a useful incentive. The remarks may be offered as suggestions during the supervision of individual study or addressed to the class as a whole at appropriate times. Occasional tests of the pupils' acquaintance with collateral reading may be used as further incentive. The best test of the value of the reading

should be the pupils' individual reports and the amount of voluntary reading done.

From the standpoint of classroom mechanics, it is important that a variety of well-selected references be available for consultation in the classroom. This means that those which apply exclusively to one unit will need to be changed as the units are completed. Pupils should be given as much freedom as they know how to use in choosing when to do collateral reading. Notebook records of the reading done should form a part of the class routine. Brief conferences after the reading relieve the teacher of the drudgery of formal book reports when the only purpose is to show that books have been read.

Coöperation should result from freedom in selecting readings. Pupils inevitably tell other pupils which books are useful, which are interesting, which best apply to specific phases of the unit, and ask similar questions concerning references the other pupils have read. Close attention is given to such reports on the relative merits of different references, since they help pupils to omit references that do not apply to their individual reports. Initiative is accordingly developed in selecting useful references efficiently.

By the exercise of a friendly attitude a teacher can convince the class that judgments of collateral readings must be sincere before they can be useful to other pupils. The over-zealous pupil who reads much and talks little; the bright-but-lazy pupil, who reads little and talks much; and the dull-lazy pupil, who does little of either, cause the chief difficulties. Methods effective with each of these types can usually be determined by experiment and frequent reference to the best interests of the class as a whole. When interest in the readings is shared by the teacher with pupils who have done the reading, these difficulties tend to disappear.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (I. F)

**1. How to induce pupils to read beyond the course requirements.**

By casual suggestions following the pupils' own expression of preferences in reading and by informal discussion after the reading has been done. By posting references on the board, so phrased as to catch the pupil's attention and arouse his curiosity.

**2. How to determine the amount of reference reading to be required.**

By the adequacy of the material contained in the basic text or other prescribed readings, as applied to the desired scope of the unit.

**3. How to capitalize a pupil's habit of extensive reading in trashy books.**

By suggesting legitimate reading on the same subjects that is likely to provoke equal interest, then shifting the subject from pure adventure to more truthful writing. Trashy reading is best discouraged by unprejudiced criticism of the values which the pupil claims for it and by encouraging the pupil to read whatever he likes from a well-selected shelf and during the class period.

**4. How to collect worth-while books of a popular sort that contribute to the work of the course.**

By consulting the numerous reading lists, special method textbook references, other teachers, librarians, current periodicals, and pupils themselves. Where the difficulty consists in securing copies of the books, pupils who have the books at home should be commissioned to read them and report for the benefit of others. Cheap copies of the books may be purchased by subscription of small amounts (when the school regulations permit) or books may be borrowed from public libraries. Much valuable collateral reading may sometimes be found in readily available sources, such as newspapers and current magazines.

## Type-Difficulty I. G[1]

### Using Examples Instead of Rules

**Summary statement of principles.** A familiar and concrete example has usually more meaning for immature pupils than the statement of a principle in abstract terms. For more advanced students the reverse is true, provided that the principle is sufficiently familiar to suggest examples automatically. For this reason a beginning teacher tends to base discussions upon principles (as for instance, in dealing with grammatical rules) when the principle in abstract form has little meaning for the class. The teacher's problem consists in collecting a sufficient number of examples to demonstrate the principle in operation. When such examples have been collected, they may be used either as data from which pupils may work out the principle themselves or as illustrative material to explain the principle when presented first in abstract terms.

To collect useful examples and to use them effectively in teaching, the first requirement is that the teacher be conversant with the subject matter both as contained in books and as applied in life. It is equally essential that the teacher be able to distinguish those applications that are familiar to the class from those that are unfamiliar.

Assignments of work upon any phase of the unit should frequently require the pupil to find applications of his own for a given principle when once the principle has been grasped. Useful examples for the teacher's later use may often be collected from pupils in this way. It is well to require pupils to give examples to illustrate any abstract statement that he does not fully understand.

[1] Related type-difficulties: *Section* I. A, C, D, E, I, J. *Section* II. G, J, L, N, P *Section* III. E, G. *Section* IV. B, C.

Examples are most useful as a means of clarifying explanations. Familiar illustrations relate abstract principles to ideas already in the pupil's mind and thus serve to familiarize him with certain aspects of the principle. Hence in making subject matter coherent and in emphasizing material needed by part of the class, the example is more effective than the abstract definition or rule.

As an explanatory device the example gives point to oral recitations and exercises, serves to interrelate the units of the course, and adds greatly to the definiteness of outlines. When the content of tests consists largely of illustrative examples to which pupils are asked to apply principles in various ways, the test becomes more interesting and more concrete.

As a factor in class management the effective use of concrete examples aids in the direction of individual work by the economy that results from the pupils' initiative. Difficulty in handling a particular point is often cleared up by asking the pupil to apply the same principle to a point already familiar. Hence efficient guidance consists in suggesting familiar examples of a principle that the pupil finds difficult to apply to the material given. The best time to make an assignment is sometimes suggested by such difficulties. When the difficulty is common to a sufficient number of pupils, the time is right for the assignment of an exercise that applies the given principle to a variety of selected examples.

The coöperative spirit of a class is encouraged by the use of concrete examples in that pupils respond with less hesitation. When obliged to formulate new concepts from reading before the concepts are discussed in terms of their own experience, there is a feeling of bewilderment in approaching new material. To introduce the new material by means of familiar examples is accordingly the accepted means of securing clearness, holding attention, and stimulating individual initiative.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (I. G)

**1. How can abstract principles (of unity in English composition) be effectively illustrated.**

By presenting several different, concrete, and familiar examples, — each of which involves the principle in question. In the case of unity, a number of simple unified paragraphs may be contrasted with a number of paragraphs which lack unity. The class should then select those that present the idea most clearly and try to account for the difference. When the principle has been recognized, the class should write unified paragraphs until the principle has been learned.

**2. When to present the rule before the example and when to reverse the order (in French grammar).**

Present the example before the rule whenever a sufficient number of adequate examples is available and when the rule needs explanation. To teach an entirely obvious rule inductively would involve waste of time if the rule needs merely to be stated to be understood.

**3. How to use personal experiences effectively to illustrate (historical) principles.**

Personal experiences may be used to exemplify historical principles in operation, as, for example, in discussing the personal applications of the principle of social interdependence. Personal experiences should be very sparingly used. The teacher who talks much about himself is more likely to exemplify conceit than to exemplify the principles to be taught.

**4. How to make pupils generalize a rule (in algebra) from concrete examples.**

By listing several problems containing the same elements and directing pupils to solve each one separately. Then direct the class to write down all the common elements observed either in the problems as analyzed or in the methods of solution applied. The common elements may then be listed on the board and the rule abstracted by the class.

## Type-Difficulty I. H[1]

### Supplementing the Textbook

**Summary statement of principles.** In the interests of coherence and convenience it is well to use a basic text in most high-school subjects. Otherwise the pupil who has not learned to use several books at once is greatly confused at the outset. The basic text should contain as much illustrative and source material as possible. The teacher's own outline will serve well enough to indicate the organization of the particular course, which can seldom be found ready-made in a textbook.

Yet no single text can supply the browsing that most courses should include. Class periods should therefore be devoted to the reading of a wide range of selected references. The pupils' purpose in this reading should be to absorb all they can of the data upon which the principles of the given subject depend. The supplementary material should consist not merely of standard references upon the content of the given unit but should include popular treatments of the subject as found in essays, biographies, magazine literature, clippings of all sorts, and written reports by pupils of former classes. For courses in subjects like science and art, as wide a range of illustrative objects and exhibits should be provided as the teacher can collect.

To select supplementary references effectively the teacher must know the literature, refer to it helpfully in making assignments, recommend summary treatments of the subject as a means of making subject matter coherent, and employ the references as a means of securing greater clearness in explanation. After new material has been presented, the teacher should indicate readings where the pupil may find the subject discussed in

[1] Related type-difficulties: *Section* I. A, D, E, F, I, J. *Section* II. A, J, K, O, P. *Section* III. F.

greater detail. Most supplementary material will, of course, be directly presented by the teacher in brief talks to illustrate a given point.

Systematic use of supplementary material requires planning. Reading references should be indexed according to the topics to be studied and so supplied to the class as a whole. Individual difficulties will require supplementary comment by the teacher, which the teacher should give as soon as the difficulties appear. Supplementary reading and comment should interrelate the work of the course, clarify difficulties discovered in the supervision of individual work, and provide effective reviews of the material from a new and fresh point of view. Tests should not emphasize too literal retention of reading, but should determine the pupils' ability to apply the reading to their own experiences and to the questions implied in the unit.

Supplementary material, including books, pamphlets, exhibits, pictures, and pupils' reports, should be available for use during the class period. In view of the usual limitations of space in most schools, it is frequently necessary to change the material for each unit of the course. Pupils should ordinarily be allowed to select their own books and to examine the material during the period when individual study is in progress.

### SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (I. H)

**1. How to find specific illustrations of the material contained in the text.**

From personal experiences, from chapter references in textbooks, by using library catalogs, by means of indices to periodical literature, such as Poole's, by consulting other teachers, from books on special methods of teaching the given subject, and from persons engaged in work related to the subject. The reading lists prepared by various associations of departmental teachers are usually well selected and often annotated.

**2. How to find more popular and generalized treatments of topics which the textbook treats in confusing detail.**

From the above sources — especially magazine articles, popular lectures, and some of the more recent encyclopedias.

**3. How to obtain illustrative objects and exhibits, as in art and science courses.**

By arrangement with local or state libraries and museums or by making an original collection with the assistance of pupils. No adequate collection of such material can be made on short notice. It is therefore wise to make a list of the kinds of exhibits desired and secure the help of pupils and others who can secure any of the items without cost. Collections accumulate rapidly when the teacher advertizes his needs.

**4. How to supplement the textbook by oral explanation when necessary.**

By marking the passages in the textbook which are not sufficiently clear to the class, and preparing examples or illustrations, familiar to the pupils, that will bring out the meaning of these passages.

## Type-Difficulty I. I[1]

### Emphasizing Material Needed by Part of the Class

**Summary statement of principles.** When the course is conducted largely on the basis of individual classroom study, the means of emphasizing material needed by part of the class are almost covered by the preceding comment on methods of supplementing the textbook. In short, where the course is divided into clearly defined units of work and each pupil uses the class material for individual study of the given unit, any desired emphasis of material for particular pupils would be made incidentally during the teacher's supervision of individual work. The

[1] Related type-difficulties: *Section* I. C, D, E, G, H, J. *Section* II. C, E, G, H, K, N, O, P. *Section* III. E, K. *Section* IV. A, C. *Section* V. E.

type-difficulties related to the preceding type-difficulty (I. H), therefore apply to courses in which the general procedure of directed study is followed.

When the course is conducted on the more conventional basis of exercises for the class as a whole, the problem of emphasizing material needed by part of the class is more difficult. Its solution clearly demands that the subject matter be well adapted to the needs of the class as a whole, so that the occasions requiring a different emphasis will be reduced to a minimum. So adapted, the materials that require a different emphasis for certain pupils can be given this emphasis when assignments are made. Thereafter they should be followed up by private conferences.

The needs of certain pupils within the class group are met by skill in treating pupils' statements. When the pupil's remarks reveal misunderstanding of essential points, the teacher should keep the points in mind and explain them repeatedly in connection with the remarks of other pupils. By references of this kind during a period given largely to oral discussion, the few pupils concerned should be led to a correct understanding of the issues. While usually less efficient for the purpose than written exercises, oral exercises have the advantage of emphasizing a common point of view for the class as a whole and in less time.

Written exercises can be used to emphasize any desired item until it is entirely plain to the class as a whole. As a basis for either reflective thinking, drill work, or review, the written exercise may be so constructed that it begins with easy questions that all pupils can think out, and concludes with more difficult questions that stimulate the initiative of the more able pupils. Supervision of individual study, whether of assigned exercises or of independent work, offers the best opportunity for emphasizing points needed by part of the class. The more supplementary exercise material the teacher has on hand for those

pupils who need special instruction, the more easily this special instruction can be given without loss of time and boredom for the other members of the class.

To locate the points that need emphasis is often more difficult than to emphasize the points. Testing is the more effective means of discovering them when the tests are prepared for this purpose. Generally speaking, the best form of test is some adaptation of the best answer or multiple-choice form, which requires the pupil to select the best and worst of various items listed as applied to a given situation. Such tests encourage discussion after pupils have taken them, so that both the test itself and the following discussion reveal points requiring further explanation and emphasis. Initiative and coöperation on the part of the class in reporting points not clear are conspicuous characteristics of a well-taught class. Coöperation in reporting difficulties leads to coöperation in solving them and also indicates the fact that the purpose of the unit is clearly understood.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (I. 1)

**1. How to drive home points that are obvious to all but a few pupils.**

By assigning these pupils special readings, simpler problems, and exercises involving the same principles, and by individual advice concerning methods of studying the points. In many cases the pupils need systematic drill on specific study habits, such as paying attention, beginning work promptly, and finding mistakes.

**2. How to emphasize material effectively in a class containing several repeaters.**

It is almost impossible to adapt a course to the needs of repeaters when the course is conducted uniformly for the class as a whole. The several repeaters should be individually observed until their points of difficulty are apparent. The difficulties should then determine special assignments for

these pupils whether such assignments parallel those for the rest of the class or not. Unless the assignments are prepared in class to some extent at least, there is less likelihood that the assigned work will give the desired emphasis. Deficiencies in methods of study can only be corrected when the pupil carries on his study under the teacher's immediate supervision.

**3. How to introduce a topic studied in former courses.**

By a pre-test to discover what pupils know about the topic that applies to the given unit. The results of the test should indicate the approach which will clear up misunderstandings and omissions without loss of interest through repetition of what is already familiar.

**4. How to keep bright pupils' interest while making the additional explanation needed by slow pupils.**

Confine the additional explanation to the pupils who need it, wherever possible. When conditions prevent such group explanation, have the pupils who understand the point explain or demonstrate it to the others. A compromise plan is to allow the abler pupils to proceed with the work as soon as they can undertake it independently, and then work with the slow group on definite exercises.

## Type-Difficulty I. J[1]

### Clearness in Explanation

**Summary statement of principles.** The ability to make clear explanations is developed by practice in explaining points that are already entirely familiar to the teacher. For an explanation to be entirely clear it must be specifically adapted to the needs and understanding of the given class. It must also tend to make the subject matter coherent, in the sense that the new explanation should be related to previous instruction.

Since the clearness of any explanation depends upon its concreteness, it is evident that illustration, examples, and demon-

[1] Related type-difficulties: *Section* I. A, C, E, G. *Section* II. B, G, K, L, O, P. *Section* III. F, K. *Section* IV. B, C. *Section* V. G. *Section* VI. H.

stration should always be used. The success of first explanations should be checked by tests or questioning. When the check shows that certain pupils have not fully understood, the first explanation should be followed up by another that employs different illustrations or by a suitable assignment that requires the pupil to work out the explanation for himself.

Oral recitations and exercises are useful as means whereby pupils who understand the point at issue receive practice in making explanations to others. Oral work in most subjects is highly inefficient, however, as a substitute for the pupils' independent application of a principle to a number of selected situations, which the written exercise provides for. By practice in applying the principle, the pupil acquires a working control of it as against the mere acquaintance that results from oral explanation. Supervision of individual study offers the best opportunity for clear explanation. No point need be explained until the pupil meets a difficulty that requires explanation, the explanation may be adapted specifically to the particular pupil and the particular difficulty, and the teacher can check the adequacy of the explanation by the pupils' success in meeting the difficulty.

Drill work should not ordinarily be attempted until all necessary explanations have been given, in order that the learner may not have to think out the purpose of the exercise but may devote his energies to the improvement of the given skill. Review work may require explanation by pupils of their methods of study, some of which are often helpful to others.

Clearness in explanation is simplified by providing illustrative materials in advance – sketches to visualize complicated descriptions, charts to demonstrate processes in science, diagrams in mathematics and languages, and specimens to substitute for verbal description. The systematic testing of all explanations should show how later explanations of the same point may be clarified.

Instruction in the habits of attention and in routine procedures of reporting points not clear tends to develop pupils' initiative. Such instruction also helps to cultivate businesslike attention to points that require explanation before pupils can proceed intelligently.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (I. J)

**1. How to make clear distinctions.**

By listing a number of items, each of which illustrates one or the other of the two elements to be distinguished, and directing each pupil to separate the items into two lists, with reasons for the distinctions made. Where the situation requires two particular items to be distinguished, select several illustrative examples of each between which the distinction is sufficiently plain.

**2. How to make clear explanations.**

By deciding (experimentally, where necessary) which pupils actually require the explanation, and at what time it is best given; by choosing effective examples and demonstrating the facts to be explained; by testing the adequacy of the explanation and supplementing it when necessary.

**3. How to handle a few pupils requiring two or more explanations.**

By assigning appropriate exercises from which the pupils may work out their own explanations independently. The teacher's help may then be given whenever the pupils are unable to proceed with the exercise.

**4. How to avoid introducing unnecessary and confusing details in the first explanation of a difficult point.**

By writing out the explanation as you propose to give it, when the explanation can be anticipated, and asking another teacher to suggest how it might be simplified. Wherever possible it is clearly best to try out your explanation first on a pupil of less than average brightness and then question him upon his understanding of it. The explanation may then be improved before it is given to the class.

**5. How to prevent replies to questions (asked by pupils after an explanation) from confusing other pupils.**

By asking that the questions be deferred until they can be answered privately, when the teacher feels that the replies would confuse other members of the group. If the reply is needed by a majority of the pupils, the teacher may request those few pupils who do not understand the reply to come privately for further explanation.

## Type-Difficulty I. K [1]

### Forming Sincere Appreciations

**Summary statement of principles.** Appreciations are taught mainly by suggestion. As in forming ideals or in recognizing the subjective values of any experience, the degree of appreciation depends entirely upon the pupil's personal equipment. It is perhaps impossible for two pupils to have precisely the same appreciations. Hence the teacher's power to stimulate the forming of sincere appreciations is closely restricted. He can bring the pupil into contact with a significant situation and he can express his personal appreciation of it, but the pupil must form his own appreciations for himself.

Adapting the significant situation to the pupils' needs and capacities is therefore the teacher's major concern. The teacher must have some knowledge of the pupils' previous contacts with the given type of situation or must obtain the knowledge by experiment. Assignments made for the purpose of forming appreciations should ordinarily be offered casually and in connection with assignments requiring reflective thinking. To throw out the suggestion that a certain type of reading (or person, or work of art, or phase of human experience) is worthy of examination, is likely to prove more effective than to require

[1] Related type-difficulties: *Section* I. C, D, E, F, G, H, I. *Section* II. B, G, J, L. *Section* IV. A, B. *Section* VI. E.

pupils to examine it. Neither should any formal reactions be required when such suggestions are offered. Both the examination or contemplation of the thing to be appreciated and the pupil's expression of his appreciation should be voluntary.

Appreciations of the course itself should make for coherence of subject matter. When the pupil is encouraged to evaluate the subject himself, he is more likely to obtain a right perspective than if the teacher imposes his own evaluation of the subject. In forming sincere appreciations, either of the subject as a whole or of particular elements, collateral reading naturally furnishes the most important medium. The teacher who can lead pupils to read voluntarily the materials that supplement the class work and which present striking examples of significant points of view, has largely mastered the teaching of appreciations. The teacher cannot form sincere appreciations without a genuine interest in pupils' personalities and a wide acquaintance with appropriate literature. Materials recommended for pupils' appreciation must be specifically adapted to individual interests.

It is frequently possible to generate an appreciative classroom atmosphere by skill in encouraging pupils to criticize. Hence pupils should evaluate their independent reading, other pupils' reports, current events, or school policies. This criticism often leads to a search for implications that require some analysis. The same incentive towards the discovery of new implications in the topic under discussion is perhaps the most valuable product of oral recitations and exercises. The force of the incentive usually depends upon the teacher's knowing when to cut short the group development of a topic so that individual pupils may continue the development themselves. Suggestions by the teacher that stimulate pupils to discover new implications in a topic, not merely serve to interrelate the work of the course, but help the class to appreciate the significance of the subject.

In summary the " teaching " of appreciations requires practice in directing the pupils' attention to significant situations and in stimulating the pupils' initiative to the point where the situations are studied voluntarily. The teacher's aim should be to create a situation that is charged with meaning for the given pupils even before the situation has been studied and analyzed.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (I. K)

**1. How to determine appreciations which the given subject should develop.**

The appreciations best developed by a given course are largely determined by the appreciations the teacher himself has formed. Appreciations which the teacher does not feel himself, he cannot share with pupils. It is, however, often possible for pupils to suggest appreciations of their own that the teacher can reinforce. Pupils' suggestions of this sort may be gathered from class discussions, written reports, and private conferences.

**2. How to teach ideals related to the given subject matter.**

Ideals related to a given subject — such as good sportsmanship, heroism, scholarship, and others — are taught in terms of appealing examples. Situations revealing the ideal in characters familiar to the pupils should be emotionalized as far as possible by some sort of dramatic presentation. If the characters chosen to express the ideal are boys and girls like the pupils rather than historical characters, the situation is often more impressive. The dramatic presentation should be made by the teacher himself, who should be careful not to overdo it. Dramatizing, in the sense of impromptu acting by the class, should be carefully avoided in all cases where an artistic effect is important. Appropriate passages, well read by the teacher, are often more effective than the teacher's own talks, for the reason that few teachers can give the necessary time to prepare talks that are sufficiently impressive to the class as a whole. Ideals are more readily emotionalized, therefore, in private conferences with pupils whose interests may be turned in the desired direction by a few well-chosen suggestions.

### 3. How to develop traits such as courtesy, honesty, and good sportsmanship in a particular class.

When certain pupils are deficient in such traits, the essential procedures are to make the trait seem worth acquiring and to point out specific things the pupil can do to develop the trait in question. Desire to acquire the trait is stimulated by examples of classmates or other acquaintances who are popular because they possess the trait, and of others who are unpopular because they lack it. Instances can be cited to convince the pupil concerned that he needs to develop the trait himself. Specific ways by which he can develop it should then be explained, such as, in the case of courtesy, by speaking more respectfully to pupils and teachers, waiting for his turn in group games, asking pardon for minor discourtesies, being helpful to classmates in little things, allowing girls to leave the room first, and the like. When these specific acts have been mentioned, the pupil should be asked to check himself on a few of them at a time and practice them until they have become habitual. This amount of self-discipline seems too much to expect of high-school pupils, but it is not too severe if the pupil sincerely appreciates his deficiency. It is probably useless for the teacher to try to develop a pupil's personal traits if the pupil does not willingly coöperate.

### 4. How to develop sincere appreciations of material that has to be "studied."

In the case of literary masterpieces, the appreciation should come first from the teacher's oral presentation and reading of passages in class. If the content is then analyzed for the purpose of explaining meanings not clear, the teacher should try to make each explanation contribute to the appreciation. This can be accomplished if no explanations are offered which the class does not feel to be necessary. In other subjects, such as science and mathematics, it is more necessary for pupils to understand before they can appreciate. Appreciations in science subjects, therefore, result from the illustrations that are used to explain the principles studied and to emphasize their importance in daily life. "Intelligent" appreciations should result from well-directed study. Æsthetic appreciations may be independent of study but should not be offset by study.

## SECTION II

## DIFFICULTIES IN PLANNING AND DIRECTING PUPILS' LEARNING ACTIVITIES

### Summary Comment Concerning the Type-Difficulties of This Section

*Any subject should be learned in the way it will be used; hence pupils' classwork should be planned in terms of activities that are in themselves important. Classwork should be directed towards objectives the pupils consider worth while and with reference to the difficulties met by pupils in attaining the objectives. Efficient teaching thus consists in the experimental discovery of the best way to help particular pupils overcome their particular difficulties in performing important learning activities in the classroom.*

The difficulties classified in this section differ from those of Section I in that they do not involve the selection of subject matter. It is here assumed that the subject matter has been selected and organized into units with reference to the needs of the class as a whole. It is further assumed that the learning activities which the teacher directs are performed largely within the classroom and during the class period.

Next in importance to the practice of defining immediate objectives for each unit, is the habit of systematic experiment in teaching. The primary purpose of this book, in a sense, is to encourage and direct such experiment. The present section includes the type-difficulties with which experiment is perhaps most necessary. Each pupil may conceivably require a different

kind or amount of direction in order to perform the same type of learning activity efficiently. Experiment with the individual case is accordingly necessary to determine the best kind and amount of direction.

Systematic experiment differs from trial and error teaching in that procedures are planned. Planning is here taken to include the collection of all type procedures that might apply to the given situation, the definition of each type procedure to a reasonable limit of detail, the application of the procedures in turn, and the recording of outcomes for future reference. Attempts to conduct *controlled* experiments in teaching are usually unwise. Not merely is the control of an entire class impossible, in the scientific sense of eliminating variables, but it is almost certain to prevent effective teaching. A teacher can often better judge the value of a certain procedure by applying it to a class under normal conditions than under the artificial conditions of "controlled" experiments. The results of the application need not necessarily be expressed in figures. It is enough if the record shows plainly to an impartial judge the effects of the procedure upon the attitude and performance of the pupils as compared with the effects of a clearly different procedure.

Experiment is particularly important in the case of difficulties involving the class as a whole. The most appropriate procedure to apply to such difficulties can usually be selected by contrasting the number of pupils who respond favorably with the number of those who do not.

One group of difficulties involving the entire class consists of those related to questioning, oral reports, and class exercises. Questioning involves experiment with different types of question, with the same questions asked at different rates of speed, with the same questions addressed to pupils of different types, and with different amounts of time devoted to questioning. Experi-

mental selection of the best combination of these factors is almost certain to improve the response.

Oral reports may likewise be conducted experimentally. They may be given extemporaneously, on a carefully planned schedule, or assigned for appropriate occasions and a day or so in advance. The reporter may question the class, the class may question the reporter, or both checks may be applied and a test given by the teacher as well. Each of these procedures may be tried out in different combinations and the best combination selected. The same sort of experiment applies to exercises, both oral and written. Should oral exercises be prepared for the entire class, for individual pupils, or for selected groups? Should the content of the exercise be familiar or unfamiliar material? Should the time be equally divided among the pupils, or should a few pupils be given the floor? In the case of written exercises, the length, form, type of work required, frequency, and later use of the exercises are all matters requiring experimental determination in the given class and subject.

Another group of difficulties involving the entire class are those which relate to coherence of subject matter and adequate explanation. To determine how best to interrelate the units of the course into a coherent plan involves experiment with a number of procedures; summarizing and outlining, use of oral reports to show the relation between the given unit and preceding units, summary readings, cross-cut problems involving the combination of several units, and others. To determine when a given point has been adequately explained, various explanations should be prepared in different degrees of detail. The most efficient explanation may then be selected by making the briefer explanations first and testing to determine when the explanation has covered the point.

Difficulties in directing reflective thinking likewise involve a

variety of teaching procedures. Some of these procedures apply to the entire class, whereas others should be applied to individual pupils or selected pupil groups. In directing individual thinking, for example, the teacher must always decide to what extent the process of thinking the problem out is more or less important for the pupils concerned than the conclusions reached. If the process of thinking is important, how much and what sort of information should the teacher supply? Which pupils respond best when allowed to find their own problems, and which need to have problems selected for them? What sort of problem stimulates a given class or group of pupils to do their best thinking — problems taken from reading, textbook problems, problems from daily life, or fictitious and puzzle problems? Most, if not all, of these questions can be answered to some extent for a given class by informal experiment. The difficulties in stimulating pupils to think should be analyzed into their several factors, and teaching procedures should be collected that serve to eliminate each factor. The procedures should then be applied to the difficulty and the most effective procedures retained.

The same sequence of analysis, collection of procedures, and experiment should be followed in connection with difficulties related to drill work, review exercises, and test performance. Direction of drill involves selection of standards or models to show the degree of skill required, selection of drill exercises which break up the skill into elements to be practiced one at a time, and selection of tests to show when sufficient skill has been acquired. Direction of review exercises involves selection of the proper time for review, selection of the principles or subunits that need to be reviewed, selection of new ways in which to present old material, and selection of the specific situations that best stimulate the pupil to correct his deficiencies and obtain a correct perspective of the unit. Direction of test performance is,

perhaps, more a matter of fact than of experiment. Yet pupils differ widely in their responses to different types of test. The teacher should therefore apply whatever test forms are adapted to the given material and select the form that tends to produce the best thinking from a majority of the class. Experiment with a given class is the best means of making an effective compromise between the economy of a limited response test and the adequacy of the essay type of test.

Difficulties in directing the learning activities of individual pupils also require experiment. The individual pupil is a better subject for experiment than the class since his reactions can be observed and recorded with greater definiteness.

The most frequent type of difficulty involving the individual pupil is the direction of classroom study. It is obvious that this term covers a wide range of specific difficulties of which many cannot be anticipated. Therefore, only the more general procedures in directing study can be selected by group experiment; namely, different methods of stimulating the pupil's initiative and sense of responsibility, methods of helping him to detect errors in his own work, methods to make him more critical in his reading, and methods of checking the pupil's attention to decide when he is not making progress. Specific difficulties must usually be met as they arise; as, for example, difficulties in explaining clearly a point that the pupil has failed to grasp and which he must understand before he can continue his work. Practice in adapting the method of directing study to the pupil's specific difficulties is the best general prescription for improvement. The more skillful the teacher is in anticipating specific pupil difficulties, the more readily the difficulties can be removed by procedures applied to the class as a whole.

Another type of difficulty involving the individual pupil has to do with the direction of class discussion — as in treating

pupils' statements, encouraging pupils to criticize, and keeping discussion to the point. Success in securing desired responses from the individual pupil here involves little more than knowing the pupil intimately. However, the ability to anticipate a pupil's response as one of the class group, is seldom acquired by private conference with the pupil. It is often necessary and always wise to record his behavior as one of the class group. For example, a pupil who will defend his statements vigorously in private, may refuse to support them before the class. Likewise, the same procedure may encourage some pupils to criticize and inhibit others, — as when to encourage criticism the teacher exaggerates an error. In keeping discussion to the point, diplomacy is required in certain cases and abrupt interruption in others. The individual record of behavior in the class group is therefore useful both in securing desired responses from the individual and in interpreting his social development to the end of helpful guidance.

## Type-Difficulty II. A[1]

### Planning

**Summary statement of principles.** To write down an advance description of all classroom activities for a given period is a waste of time for the high-school teacher in service, however useful it may be for students in training. Too little time is available as it is for the recording of significant data concerning pupils upon which constructive planning may be based. Therefore, the traditional lesson plan has little value in high-school teaching. Intelligent planning takes the subject-matter unit as its objective rather than any "lesson" or series of lessons as such. The planning, moreover, consists in the collection of various pro-

[1] Related type-difficulties: *Section* I. B, C, D. *Section* II. G, H, J, K, N. *Section* III. E. *Section* IV. A, B, C. *Section* V. A, C, K.

cedures that may help to remove a given difficulty and from which the best procedure may be selected by experiment. By "best" procedure is meant the procedure that is applied to the best advantage of a given class, in connection with a given unit of subject matter, and by a particular teacher.

For example, in introducing a given unit the teacher should plan the examples to be used in explaining the character and purpose of the course, the methods of explaining the classroom procedure to be followed, the most efficient manner of learning pupils' names, the most effective ways of securing coöperation, and the like. In adapting subject matter to the needs of the class the teacher should plan a variety of illustrations in which each pupil is likely to find some contact with his previous experience. In planning assignments, whether of readings, oral reports, or written reports, — different methods of presentation should be outlined with reference to the interests of different pupil groups. Specific suggestions should be recorded to which the teacher may refer in adapting the assignment to the pupil's abilities and to the objective of the given unit. Each of the procedures here mentioned should be planned if serious difficulties are to be avoided. The procedures mentioned require careful selection on the basis of two sets of facts; namely, the best interests of the pupil and the objective of the unit. It is, therefore, not ordinarily possible for most teachers to select procedures with due regard to both considerations unless the selection is planned in advance. Progress consists in the systematic revision of the plan on the basis of its success when applied.

In planning methods of directing individual study, the teacher should secure and analyze data concerning individual pupils' methods of work. A simple procedure here is to keep a notebook in which the difficulties met by pupils are listed for each unit, together with the names of the pupils meeting the difficulty, and

enough explanatory comment to define the difficulty clearly. A classification of these difficulties constitutes the basis for supervision of study in the given unit.

Planning is helpful in developing a coöperative spirit on the part of the class by organizing pupil groups. Such procedures may take the form of committee projects, discussion groups, floor talks, and other devices. Methods of teaching pupils to follow oral presentations, to select essentials in reading, to organize written work, to apply original ideas and the like, are best collected and then selected by experiment. Procedures that encourage pupils to describe their own methods of work for the benefit of others, tend to improve not merely the methods of work but also the coöperation of the class.

Difficulties resulting from the characteristics of individual pupils respond to planning when based on private conferences. Timid, lazy, and otherwise peculiar pupils often require an approach that is entirely personal and which is best discovered by experiment based on the suggestions gleaned from private interviews concerning the individual's interests.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (II. A)

**1. To what extent should detailed lesson plans be written out?**

To the extent necessary to record a variety of ways of meeting anticipated difficulties. No more detail is necessary than will define each procedure so that its application is clear. After the procedure has been applied, the results should be recorded. An outline should usually be written out for the teacher's guidance when new work is presented orally, together with concrete illustrations that the teacher may forget unless recorded.

**2. How to plan daily work in accordance with an outline for the term.**

By classifying the significant difficulties met by pupils in each unit, together with the procedures which apply to each type of difficulty. The

outline for the term should help the teacher to anticipate pupil difficulties in units to follow. If a comprehensive list of aims for the course has been prepared, the aim for a given unit may be readily selected. Daily work may then be planned by selecting whatever work will best help pupils to overcome the difficulties met in accomplishing the particular aims.

**3. How to tell when to abandon a lesson plan in favor of a lead supplied by the pupils.**

In dealing with individual pupils, the pupil's lead should be followed invariably if related to the purpose of the unit. In dealing with the class as a whole, the lesson plan should receive the preference when it represents the teacher's best judgment as to the most efficient use of the period. It should, however, be abandoned whenever the class response indicates that certain points need to be cleared up before the planned work can be undertaken successfully. "Stalling" can be detected when difficulties are not genuine.

**4. How to lead pupils to plan the development of a given topic.**

By making clear the central principle of the unit and requiring the pupil to relate his topic to the principle with the best illustrations he can find. Textbooks may be used to suggest illustrations. After the teacher has demonstrated the relation of several topics to the unit idea, pupils should be able to relate them independently.

**5. How to find out new things for the pupils to do in the classroom that will result in their learning the subject matter assigned.**

By consulting literature and other teachers, and by applying the teacher's own knowledge of the individual pupil's interests and abilities. The guiding principle in selecting classroom activities is, "Teach the subject matter in the way it will be used."

**6. How to plan methods of dealing with individual pupils who present peculiar problems.**

By analyzing the pupil's difficulties in his work, and collecting various ways of helping the pupil meet them. When the teacher's difficulty is

personal, the personal element is likely to disappear when pupil and teacher coöperate in attempting to overcome the pupil's difficulties in his work. If the problem consists in the fact that the pupil refuses to coöperate, a different approach must be planned in the light of the principles presented in Sections IV and V.

## Type-Difficulty II. B [1]

### Questioning

**Summary statement of principles.** Oral questioning is usually overdone. The practice of attempting to "develop" a topic by a series of questions put to an entire class is usually inefficient. The effect of such questions is rather to encourage pupils to guess what the teacher wants them to say than to encourage independent analysis of the material covered by the question. When the size of the group permits a natural give-and-take of questioning, oral questions may be used to stimulate a natural group discussion. This use of the question is often effective in foreign language and practical arts or fine arts where the purpose is to give practice in putting ideas into words. As a rule, however, the same effects are secured more efficiently by written exercises or informal tests.

The question is a natural means of stimulating thinking when addressed to individual pupils privately. Its prime function is to show the individual pupil how his own problem or assignment or difficulty relates to the purpose of the work. It should, therefore, be a natural and direct question that helps the pupil to define his difficulty, to analyze it, and to think it out in relation to new information that will explain the difficulty. The direct question is thus useful in emphasizing the coherence of related items. Clearness in explanation is naturally checked by asking pupils whether they understand the explanation and how it can

[1] Related type-difficulties: *Section* I. C, E, J. *Section* II. E, F, K, L, N, O, P. *Section* III. D, E. *Section* IV. A, B.

be applied to the work that each has in hand. Explanations are often clarified if the teacher first asks an important question pertaining to the work and then proceeds to answer it. In much the same way, questions serve to check digressions, as in oral reports, and help to keep discussion to the point.

In oral recitations and exercises, questioning helps pupils to find new implications in the matters discussed. Such questions must be specifically adapted to the pupil addressed, as in directing individual study. Pupils should be asked to specify their difficulties and to explain their methods of work. By asking pupils privately to interpret their individual readings, the teacher learns what sort of direction is needed.

Oral questioning is a common but highly inefficient form of drill, except in subjects like foreign language and oral expression. Generally speaking, drill questions should be written, in order to provide for individual rates of speed and individual needs for drill on different parts of the work. The same is true of questioning for test purposes. While a question that is useful in directing pupils' thinking is sometimes also useful as a test, the oral question is seldom a satisfactory test of anything but the pupils' ability to understand the question itself. Oral questioning for review purposes helps to emphasize coherence.

As a factor in class management, questioning serves to recall wandering attention and thus to preserve a work atmosphere throughout the period. The more such control questions express friendliness and sincerity, the better their effect. Questions are also important factors in directing the mechanics of individual study. Class coöperation is increased by occasional questions which direct attention to the common purpose and also to significant details. Pupils whose abilities are uneven are helped by skillful questioning to concentrate on major difficulties.

SPECIFIC DIRECTIONS AND SOLUTIONS REPORTED (II. B)

**1. How to ask questions that are stimulating to a majority of the class.**

By rarely putting questions to the class as a whole. Questions that stimulate a majority of the class are largely confined to the following types: questions concerning out-of-class experiences related to the work and familiar to all pupils, questions concerning broad aspects of the unit that all pupils should find significant, and questions concerning methods of study that all pupils have occasion to use. In most cases, questions concerning these topics should be written on the board or distributed on mimeographed sheets to serve as guides in individual study. When presented orally, broad guide questions should be presented singly with plenty of time allowed for pupils to work out the implications according to their individual abilities. The most stimulating type of question is that which requires a decision leading to other questions.

In general, the more stimulating the question, the less it applies to the class as a whole.

**2. How to avoid the necessity of repeating questions.**

By writing questions which deserve group attention on the board, and taking pains to make the phrasing as clear as possible.

**3. How to determine the time that should be allowed for replies to questions.**

This can seldom be determined except by experiment. Questions asked for the purpose of directing study should allow as much time as each pupil requires to meet the question deliberately. In other words, no time limit need be set if pupils respond to the question in writing, each at his own best rate. Oral questions should be spaced according to the time required for the entire class to respond satisfactorily.

**4. How to adapt questions to pupils of different abilities.**

By allowing pupils to study independently during the period and asking only such questions as are suggested by the difficulties encountered by individual pupils during their study. In phrasing questions care should be taken to use no terms the pupil does not fully understand. It is perhaps less important that the question should be adapted to different abilities

than that it be adapted to different degrees of knowledge about the answer and to different vocabularies.

**5. How to follow up pupils' replies to questions.**

When the replies are made to the teacher in private, they should be followed up by whatever suggestions will best help the pupil to make his answer more complete. When the reply is made before the entire class, it should be followed up by whatever comment will best explain difficulties that a majority of the class seems to have in understanding the point fully.

**6. How to prevent unison replies to questions.**

By asking for the replies in writing, having papers exchanged, the correct answer stated, the papers checked, and then returned to their owners. The difficulties thus indicated may then be explained.

**7. How to encourage pupils to ask questions about points not clear.**

By placing the responsibility upon each pupil for working out a clear understanding of the unit. By asking the pupil to explain points he mistakenly thinks he understands, and emphasizing the wisdom of checking up his knowledge of important points. By collecting and experimenting with various devices to make the pupil more critical of his work — *e.g.*, exhibits of other pupils' work, direction sheets, self-checking tests, and scheduled conferences.

**8. How to make questions properly suggestive.**

By analysis of the pupil's individual difficulties. By relating each question to what the audience already knows something about and so helping them "put two and two together." By creating "forked-road situations" which require pupils to make deliberate decisions after figuring out the probable consequences of either choice.

**9. How to make questions converge on the same point and hang together.**

By confining all directive questions to the individual pupil's difficulties, taking one difficulty at a time. When the questions are addressed to the entire group, they should all relate to a common difficulty or to the advertised purpose of the exercise.

## Type-Difficulty II. C[1]

### Treating Pupils' Statements

**Summary statement of principles.** The statement of this difficulty implies that the pupil's statements are made orally and to the class group as a whole. It is obvious that all such statements cannot be discussed fully enough to benefit the pupils concerned unless the teacher is willing to waste the time of other pupils. One pupil's statement is rarely of sufficient importance to the class to justify the time required to discuss it. The following comment is, therefore, most concerned with the difficulties encountered by teachers in treating pupils' oral and written statements individually and during classroom study.

Before any specific difficulty is explained to an individual pupil, he should be encouraged to think it through on his own initiative. Pupils meet various difficulties in bringing their reading and thinking to bear upon the purpose of the unit. Some of the difficulties require the teacher's assistance. Other difficulties the pupil should work out for himself. In treating pupils' statements the teacher should therefore help the pupil to analyze his difficulties to the point where he can solve them independently. The same principle applies to group difficulties, with the difference that the group difficulty frequently requires a redefinition of the purpose of the work or further demonstration of how the work should be done.

The teacher should encourage pupils to criticize their own statements. Constructive criticism involves analysis of the statement into various elements that can be readily disposed of one at a time. Criticism also involves keeping standards in mind. In criticizing pupils' work, the essential standards are

[1] Related type-difficulties: *Section* I. C, I, J. *Section* II. D, E, J, K, L, O. *Section* III. D, E, H. *Section* IV. A, B, E, F. *Section* V. G, H. *Section* VI. C, F.

two: namely, the purpose of the work, and efficiency in selecting methods to accomplish the purpose. Pupils may be taught to criticize their own work in terms of both standards. Analysis of a pupil's own work in terms of the present objective is what is usually meant by "keeping to the point." Practice in planning work toward a definite end makes pupils better able to avoid digressions themselves and to detect digressions made by other pupils. When pupils have become critical of rambling, oral recitations and exercises are more useful in directing the work of the class as a whole.

The teacher's treatment of pupils' statements can serve no more important purpose than to generalize the habit of self-criticism. Self-criticism makes for a coöperative attitude and for closer attention to the pupil's own work. Pupils of uneven abilities benefit greatly by self-criticism. A self-critical attitude encourages pupils to interrelate different phases of the work, simplifies the teacher's criticism of individual study, and encourages pupils to review the work covered on their own initiative. Except where grammatical errors are gross or are made deliberately, the teacher should seldom correct them before the class. To do so usually interrupts the train of thought. Pupils' statements should be treated seriously if they are made seriously, and the pupil's frankness is encouraged by the teacher's friendliness and sense of humor.

### SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (II. C)

**1. How to criticize pupils' answers constructively.**

By leading pupils to criticize their own statements, thereby helping them to define their own difficulties and to plan methods of meeting the difficulties with a minimum amount of assistance. The absurdity of inaccurate statements is often revealed by applying the statement literally to a familiar situation.

**2. How to criticize pupils' oral reports and other contributions.**

By pointing out the implications that pupils overlook and commenting upon their importance to a fuller understanding of the topic. By pointing out examples which might be used to make the report useful to the audience in relating the topic to their familiar experience.

**3. How to criticize pupils' board work so that it is helpful to other pupils.**

By asking the class to detect the errors or points that might be improved and listing or marking them as such; then let each pupil select the points with which he has had trouble himself and explain methods of correcting or avoiding them.

**4. How to criticize written work without undue attention to details and with sufficient emphasis on the most important points.**

By requiring pupils to find and correct their own mistakes as far as possible, particularly misstatements of fact and weaknesses in organization of material. Ask the individual pupil such questions as will force him to recognize discrepancies between the written work and the purpose it is intended to serve.

**5. How to select the pertinent element in a pupil's statement and use it in developing the topic under discussion.**

This implies that the teacher presents a topic by oral questioning, which is seldom an efficient procedure. The significant element in a pupil's statement is usually the element that reveals a difficulty. When the difficulty is shared by a majority of the class it obviously needs explanation. Otherwise it should be explained privately to the pupils concerned. When the occasion demands "development" of a topic by group questioning, the teacher should elaborate the pupil's reply to the question asked in order to show to what extent the point is covered. The next question should be based on the ideas that the pupil did not cover, and so on with other questions.

**6. To what extent should pupils' grammatical errors in speech be corrected and when.**

Pupils' grammatical errors should be corrected whenever the correction can be made without side-tracking the thought. The briefer the correction, the better. To prevent side-tracking the thought, the errors may be noted and cleared up by explanation and practice at some time reserved for the purpose.

## Type-Difficulty II. D[1]

### Encouraging Pupils to Criticize

**Summary statement of principles.** Encouragement of the pupils' self-criticism has been mentioned as an important purpose in treating pupils' statements. Certain procedures were suggested that are effective in making pupils constructively *self*-critical. The present comment is therefore more concerned with the difficulty of making pupils critical of the course itself and of other pupils' work.

Pupils' criticism is helpful in adapting subject matter to the needs of the class as a whole, as in making assignments. Criticism is encouraged by friendliness, which overcomes timidity and secures the coöperation of the class. Pupils are more likely to take the initiative in offering criticism when they are convinced that the teacher gives serious attention to the criticism offered. The prescribed subject matter of the course, for example, is too generally accepted by pupils without question. When once they understand that the teacher's success in conducting the course depends upon his knowledge of individual pupils' needs, abilities, and interests, pupils often respond with suggestions that are at least worthy of the teacher's consideration. For example, pupils can offer helpful suggestions concerning such matters as the clearness of the teacher's explanations, the difficulties that

[1] Related type-difficulties: *Section* I. C, D, I. *Section* II. E, F, G, O. *Section* IV. A, B, C. *Section* V. A, B. *Section* VI. C.

are common to the group, the convenience and sufficiency of reference materials and other study equipment, the work in other subjects that might be related to the given unit, school activities and other outside interests that bear upon the work, and their own weaknesses in meeting problems of particular types. Such suggestions help the teacher in selecting occasions and topics for individual reports and floor talks, in planning oral and written exercises for the difficulties indicated, and in conducting reviews of materials needing further emphasis. Suggestions from the pupils that the teacher can adopt without modification are rarely obtained, of course. Yet the effort to make pupils assume responsibility for their methods of study produces closer coöperation and frequently reveals pupil difficulties that are readily removed when discovered.

Pupils are encouraged to criticize the work of other pupils by organizing pupil-reviewing committees to read and comment upon the written work of other pupils, by discussion of prepared oral reports and recitations, and by criticism of board work or the result of laboratory exercises. Too much criticism by overzealous pupils is readily checked by the protests of the other pupils criticized.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (II. D)

**1. How to encourage worth-while criticisms and challenges of unsound statements.**

By emphasizing the fact that errors must be recognized before they can be avoided or corrected. All sincere criticisms are worthwhile. Unsound statements allowed to pass unchallenged are evidence that the audience is either not attentive or fails to understand the question discussed. To direct this criticism, pupils should be taught to decide what the statement is intended to prove and then receive practice in detecting superficial statements before the teacher points them out. Best-answer exercises are useful for such practice.

**2. How to secure thoughtful criticism of oral reports.**

By giving the class advance notice of the content of the report and providing reading material which will give a basis for intelligent (written) criticism of the report when made. (See oral reports.)

**3. How to stimulate criticism of laboratory technique (in science courses).**

By encouraging pupils to report points of difficulty both in their own methods of work and in methods applied by other pupils. The teacher may then demonstrate better technique to overcome the difficulties. Pupils may be asked to give brief demonstrations which the other pupils criticize from the standpoint of technique alone.

**4. How to keep a class in a critical attitude of mind during drill work.**

By presenting a standard or model of satisfactory work with which each pupil may compare the results of his own practice. When certain pupils are unable to detect their mistakes, other pupils may be asked to criticize.

## Type-Difficulty II. E[1]

### Keeping Discussion to the Point

**Summary statement of principles.** The difficulty here clearly implies *oral* discussion, but it appears as frequently in written work where it is usually met to better advantage. Irrelevant talking is less serious than irrelevant writing. The former often indicates a desire to say something when one has nothing to say. The latter usually indicates, in addition, that the writer has failed to organize his material with reference to his purpose in writing.

From the above statement it follows that subject matter must be sufficiently adapted to the needs of the class to suggest questions that pupils consider worth discussion. The assignment of any work, whether made in writing or orally, should accordingly

[1] Related type-difficulties: *Section* I. C, D, E, J. *Section* II. B, C, D, F, H. *Section* III. D, K. *Section* IV. A, B. *Section* V. B. *Section* VI. B.

be explained so clearly that pupils feel its worth and are challenged to find out more about it. The materials for study must also be coherent. Unless pupils recognize the unity of the various ideas presented, they cannot justly be expected to discuss the ideas in unified form. To keep one's discussion to the point one must first define the point. The rejection of irrelevant ideas is then largely a matter of experiment. This principle applies with equal force to both teacher and pupil.

In helping pupils to keep to the point, the question mark is usually sufficient. In pupils' written work, write " What does it mean? " on the margin. In oral discussion, the same question asked another pupil will demonstrate the fact that the pupil speaking has failed to show the connection between his statements and the purpose of his talk. To treat pupils' irrelevant statements in this way is likely to make the class as a whole more critical of rambling remarks. Hence, the irrelevant remark becomes unfashionable when pupils coöperate in calling attention to it. Beyond this critical attitude the teacher should exercise authority in suppressing the remarks of over-zealous pupils who tend to monopolize discussion for their own advertisement.

Digressions in written work can be virtually eliminated in written exercises and tests. The written exercise may be so constructed that the pupils have merely to check certain items listed in order to arrive at the desired conclusion. (See specimen exercises, Appendix E.) Limited response tests, by the manner of their construction, likewise eliminate the possibility of rambling.

### SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (II. E)

**1. How to keep all pupils' attention to the subject.**

By occasional class exercises in attending to short lectures. When pupils are challenged to see how much each can remember and repeat of talks increasing in length from five to twenty minutes, a habit of attention is

formed. It is clear that such practice should be confined to talks which deserve each pupil's attention, though they need not be entertaining. Such talks by the teacher should be infrequent to give the exercise the element of novelty. The same procedure applies when the difficulty involves the pupils' attention to individual work. The problem is here to interest the pupil in the *efficiency* of his work. This requires some device for self-checking of results. Miscellaneous reading can scarcely hold attention throughout the period unless the pupil tries to collect and understand information as economically as possible and apply it to some definite end or problem. The tendency to wander from the point is often checked by asking the pupil to state the question he is attempting to answer.

**2. How to permit digressions enough to keep the discussion alive without wasting time or confusing the point at issue.**

When the discussion is oral, by allowing the talk to proceed and then asking pupils to criticize the digressions from the standpoints of both interest and clearness. When the discussion is written, by requiring the writer to revise his work until all points of confusion are eliminated and the interesting features retained.

**3. How to remind pupils tactfully that their remarks are irrelevant.**

No great tact should be required if the importance of relevancy has been sufficiently stressed. Pupils who are unduly sensitive may be criticized privately. An interesting topic that is beside the point may occasionally be followed to satisfy the interest or until the topic is brought to bear upon the main issue. Otherwise, simply ask the pupil what bearing his remarks have upon the topic.

**4. How to restrict the teacher's participation to the minimum.**

By conducting oral discussions involving the entire class only rarely and when pupils are prepared to participate. Appropriate times for general discussions are at the beginning and at the close of a unit. The teacher's participation may then well be restricted to the rôle of chairman.

**5. How to emphasize the conclusions reached so that all pupils may be clearly conscious of them.**

When the conclusions have been reached by oral discussion involving the entire class, they may be written on the board, commented upon by the teacher, and referred to the class individually for further study and criticism.

## Type-Difficulty II. F [1]

### Oral Reports

**Summary statement of principles.** Since the administration of reports is discussed elsewhere (III. I) as a phase of class management, the present comment is restricted to the use of reports as a means of helping pupils to learn.

Written reports adapt subject matter to the needs of the class, or of part of the class, since they provide for the independent organization of the material by the pupil reporting. When oral reports are assigned to pupils who have special interest or special knowledge of the topics presented, the reports help the class to obtain a useful point of view. The outline of the report should be checked by the teacher in advance to remove whatever is likely to confuse the class audience. By making an oral report, the pupil inevitably clarifies his own command of the material. To explain ideas to others is an excellent means of making ideas clear to oneself. Hence, oral reports should add interest to the material of the unit for other pupils and should help to organize the material for the pupil reporting.

The oral report offers good opportunity for constructive criticism, criticism not merely of the speaker's judgment, but of the organization and presentation of his report. Practice in keeping to the point of a discussion is offered by criticism of the reporter's digressions. Oral reports provide good review exercises, since they help to present old material in new ways.

The efficient direction of oral reports takes for granted the

[1] Related type-difficulties: *Section* I. C, E, I. *Section* II. D, E, O. *Section* III. I, J, K. *Section* IV. A, B, C.

coöperation of the class group. Coöperation implies that pupils reporting show initiative in preparing talks that hold the audience. The teacher's care in selecting and assigning topics for reports is the essential factor in securing the coöperation. Other factors of a routine sort are helpful, such as the use of pupil notebooks to record the substance and criticism of reports. Informal tests emphasize the importance of close attention to the report and to the following discussion. Tests for this purpose may often be prepared in part by the pupil reporting.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (II. F)

**1. What sort of material should be assigned for individual reports?**

Material related to the unit with which a certain pupil may be unusually familiar as a result of part-time work, special reading interests, parents' occupation, or other experiences; material of which certain members of the class have made special study during their work on the unit, or helpful material of which the class is ignorant and which the pupil designated can readily prepare.

**2. How should reports on special topics be assigned?**

Topics should be assigned in general to those pupils best able to present them effectively. Exceptions to this rule should be made in favor of pupils who would be greatly benefited by the experience of preparing and making the report and pupils who would probably benefit by the criticism of classmates.

**3. How to secure an attentive audience for oral reports.**

In addition to the procedures suggested in Section III. I, attention to oral reports is secured by making clear the relation of the topic to the work of the unit, by providing graphic or other concrete illustrations, by placing an outline of the talk on the board so that it may be easily followed by the class, and by requesting the class to make note of questions to be asked in the discussion to follow.

**4. How to increase the value of individual reports to the other members of the class.**

By care in selecting topics that relate to the general work of the unit, by inviting the class to propose topics for oral report based on phases of the unit which individuals wish to know more about, and by organizing the discussion following the report in such manner that each pupil will be held responsible for the topic presented.

**5. How to make the pupil reporting really try to interest his audience and to convey what he has to say.**

By emphasizing the fact on every occasion that no report is satisfactory that fails to interest an audience when the audience is already assumed to have an interest in the topic; also by assisting the pupil in the choice of illustrations and other means of arousing interest.

**6. How to induce pupils to take the preparation of oral reports more seriously.**

By scheduling oral reports somewhat infrequently and assigning them to pupils as a special privilege. It is well to explain that class time can be allowed only for reports that make a definite contribution to the pupils' understanding of the unit. Serious preparation of oral reports is greatly encouraged by making reference materials readily accessible. Unless the school library facilities are unusually good, the teacher should collect the essential reference materials personally and have them ready for pupils' use in the classroom.

## Type-Difficulty II. G[1]

### Oral Recitations and Exercises

**Summary statement of principles.** The essential factor in learning most high-school subjects is purposive thinking in terms of materials read. To stimulate and direct such thinking, the teacher must present the central principles involved and show

[1] Related type-difficulties: *Section* I. C, D, H, I, J. *Section* II. E, K, N, O. *Section* III. D, E, K. *Section* IV. A, B, C. *Section* VI. C.

pupils how to apply their reading and thinking to the fuller understanding of the principles. Hence, it follows that the class period is most efficiently used when each pupil is engaged in work that contributes directly to his own understanding of the principle. Incidental explanation and illustration by the teacher is necessary to keep the pupil conscious of the purpose and meaning of his work. Recitations by the pupil, however, have little to contribute to the benefit of other pupils which the teacher cannot contribute to better advantage. Oral recitations consequently represent poor economy of time for the class as a whole and should accordingly consume but a small part of the time available. The justification for oral work of any kind (except where oral work constitutes the subject of instruction, as in language) consists largely in its benefit to the pupil reciting. Oral work is also justified by the social interest in comparing notes and by the value of occasional " discussions " after pupils have acquired ideas to discuss. Oral discussion, as distinct from the teacher's systematic presentation of new material, encourages incidental supplementing of the textbook material and greater emphasis of material needed by part of the class than can be given economically by private conferences.

Oral recitations and exercises, therefore, should take place if and when they can serve to adapt subject matter more effectively to the needs of the class. Whenever pupils are unable to perform the work assigned because of some difficulty that the teacher has failed to anticipate, an oral discussion is an economical means of having the difficulty " aired." An exercise of the sort in which several pupils explain how to deal with the difficulty, tends to reinforce the teacher's explanation by the number of different situations to which it is applied.

The natural occasion for oral exercises is the teacher's discovery that a significant proportion of the class is confused by the work

at hand. Confusion can be observed by even a casual supervision of pupils' study. When the confusion becomes at all general, the pupils confused should be invited to stop their work and listen while certain ones describe their specific difficulties. The teacher may then make a general explanation, to be followed, perhaps, by an oral drill exercise in which pupils apply the given explanation to their individual difficulties. The same sort of exercise is often effective in review, when several pupils briefly present their interpretations of troublesome readings. Oral questioning by the teacher occasionally serves the same purpose of ventilating a common difficulty. The purpose of the questions should be to direct individual work. The question should require the pupils addressed to explain their methods of handling a common difficulty. The various methods described may then be criticized by the teacher simultaneously, and the best method more clearly defined by contrast with other methods.

When pupils coöperate in the discussion of common problems, close attention is given to oral exercises of the kind described. Oral work that is introduced only when pupils feel the need for it, secures a response very different from that of the conventional recitation. Pupils' prepared floor talks are more helpful than conventional recitations, because of their infrequency and the time allowed for preparation. The floor talks also stimulate pupil initiative in various useful directions. Perhaps the most significant of these is the greater care in organizing material and greater effort to convey useful ideas to the pupil audience. Occasional oral exercises to illuminate a common difficulty should secure the same response. By the expression of a due amount of friendliness the teacher conveys the idea that the exercise is intended to help all participants. An oral exercise that pupils find tedious is either not needed by the pupils who are bored, not well organized, or not given at the right time.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (II. G)

**1. How to determine the kinds of subject matter that are best taught by oral recitation.**

By recording pupil difficulties as volunteered by pupils and as observed in supervising individual study. Oral recitations may be devoted to preliminary discussion of the unit, common difficulties, or to individual interpretations and summaries of the completed unit. Incidental oral discussions are appropriate whenever either teacher or pupils have anything to say that is pertinent to the work in hand and useful to a sufficient number of the pupils.

**2. How to alternate oral recitation with written and study exercises as a means of avoiding monotony.**

By introducing whatever type of activity is needed by a majority of the class at a given time. Pupils cannot recite to advantage until they have made a careful study of materials on which to recite. Study should be the predominant classroom activity, varied by explanation or recitation only when difficulties are encountered which need to be cleared up before study can proceed. The teacher should not hesitate to interrupt individual study whenever he has anything to offer that will clarify the work in hand or strengthen the class morale.

**3. How to eliminate conventional formalities in oral recitation.**

By eliminating the conventional recitation as such and substituting a more direct and rational method of learning; namely, study under the teacher's direction and for a clearly defined purpose which each pupil seeks to accomplish by his individual efforts.

**4. How to discover new ways of introducing competition in oral exercises.**

Competition should not be necessary when the purpose of the oral exercise is to explain more fully how a common difficulty may be overcome. An unusual situation does sometimes justify a competitive exercise. Competition is easily aroused by an exercise placed on the board which can be taken alternately by members of two or more selected groups of pupils, or

by a list of items to be selected or checked in various ways. The more objective the scoring, the more satisfactory the competition, since the decisions made by the pupils can be compared with greater definiteness.

### 5. How to check the results of recitation and oral exercises at the close of each period.

By confining oral drill work to the application of a single broad principle wherever possible. It is taken for granted that these applications *must* be oral, as in foreign language work, otherwise written exercises are more efficient. Checks of oral practice may then be made after each pupil's performance. Where pupil recitations are made for the sake of allowing the pupil to organize his material for presentation to an audience, the recitation itself is readily checked in the teacher's record, because the number of such recitations is necessarily small. Checks of oral work should consist primarily in a record of the pupil's social traits as expressed in the audience situation. Written work usually offers a more objective and hence more reliable basis for checking the adequacy of the pupils' learning.

### 6. How to make the class assume more responsibility for the conduct of oral recitations.

By emphasizing the fact that oral work is social in purpose and requires exchange of ideas. The audience should be induced to discuss the pupil's presentation in order to understand it more fully and to supplement it by pertinent material found by individuals in their own study. The amount and value of class discussion following the recitation should determine the number of oral recitations and the proportion of class time given to them.

### 7. How to use oral recitations as a means of improving pupils' everyday use of English.

By recording the errors made and insisting upon their systematic elimination. After the error has been adequately explained and noted by the pupil, it is legitimate to refuse both oral and written work in which the same errors recur. New errors should not be added to the pupil's list until previous errors have been overcome.

**8. How to utilize dramatization and avoid laborious preparation.**

Dramatizing scenes from literature is about the only use of dramatization as a method of high-school teaching. To dramatize in other subjects is usually to waste time by emphasizing superficial appearance at the expense of real understanding. In literary interpretations, laborious preparation sometimes does more harm than good. Interpretative readings from the text should often be impromptu and conducted for the purpose of helping a class to agree on the best interpretation of the passages read.

## Type-Difficulty II. H[1]

### Written Exercises and Reports

**Summary statement of principles.** Exercises are here understood to include any written assignments to be worked in class. Their purpose is to bring to the attention of each pupil a typical problem that needs to be explored. Hence, the exercise should focus attention upon a single point of difficulty and give practice in meeting the same difficulty in a variety of different situations. Examples of efficient exercises are a list of mathematical expressions involving the same principle, a list of questions based upon the interpretation of a given passage in English literature, a list of errors in language to be corrected by applying the same grammatical rule, a list of reasons to explain a certain process in natural science, and the like in other subjects. The exercise is efficient when it concentrates the thinking of all pupils upon a single principle to be learned and reveals the individual difficulties requiring further explanation or practice.

A written exercise assigned to an entire class should be adapted to the needs of the entire class. The selection of material for the exercise should consequently be made on the basis of pre-

[1] Related type-difficulties: *Section* I. C, I. *Section* II. K, N, O. *Section* III. C, E, F, L, M. *Section* IV. C, E. *Section* V. C, D.

vious work in the unit. If, during his supervision of individual study, the teacher keeps some record of the difficulties of individual pupils, he will know whenever a given difficulty can be more economically explained to the class as a whole than to individual pupils. When a common difficulty is observed, study may be interrupted until the difficulty has been removed by a written exercise and the subsequent individual explanations. If different groups of pupils are confronted by different difficulties, each group may, of course, work upon a different exercise. The written exercise should almost always be employed for purposes of concentrating attention upon some one principle of major importance.

As a mechanical aid to the location of common difficulties, it is well to make pupils responsible for reporting their difficulties. When pupils are engaged in different types of work and grouped accordingly, the difficulties of each group are more easily noticed. The preparation of mimeographed direction sheets is useful here, in that pupils can check the directions they are not able to follow. When written exercises are used as a means of applying the teacher's explanations of new material, the exercise may be prepared in advance and mimeographed. This type of exercise allows an arrangement of the problems from easy to more difficult problems, thus permitting all pupils to make some headway and providing more stimulating material for the abler pupils who work more rapidly. (See illustrations in Appendix E.)

Teachers often employ oral discussions where written exercises would be more efficient because of lack of time to read the papers. Generally speaking, it is unnecessary to read written exercises for any purpose other than to discover the mistakes that pupils cannot discover themselves. Written exercises need never be marked as tests, since their purpose is to explain. They are only tests in that they show which points are not

understood and which therefore need explanation and further practice. It is, therefore, usually sufficient to have pupils exchange papers and check the items as the teacher reads the correct answers. A show of hands on each item of the exercise will show which items have been missed and by whom, thus making it unnecessary to read the papers for this purpose.

Exercises should be prepared with sufficient care to stimulate pupils' initiative. They are excellent devices for beginning work promptly. When the exercise employs the form of the best-answer test, individual judgment is challenged in selecting that one of various solutions which best meets a given problem. The advantage in this type of exercise consists in the amount of disagreement among pupils as to which answer is "best," since the disagreement leads naturally to profitable discussion and comparison of reasons for the selections made.

Written reports on the unit as a whole may well constitute the major classroom activity in such subjects as social science, literature, natural science, and other content subjects. When the meaning of the unit is clear, each pupil may select references that bear upon the unit as a whole. After the references have been read and noted, several days may be spent in preparing the report in writing. Such reports make for wider understanding of the unit and a more useful organization of material than usually results from a series of daily "lessons."

Carefulness in thinking is a natural effect of written as contrasted with oral work. When the pupil declares himself on paper and is allowed sufficient time to make careful judgments, there is less tendency to substitute words for ideas. The objective evidence of thinking done, which the written exercise affords, also tends to discourage laziness in pupils of different degrees of ability. The written report on the unit is in many subjects the best means of organizing ideas.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (II. H)

**1. How to emphasize the importance of form without sacrificing interest in substance.**

By rejecting all papers habitually in which the form is not satisfactory. The justification for this practice can be made clear at the outset of the course. The more satisfactory the content, the greater the pupils' responsibility for organizing and presenting it attractively.

**2. How to criticize written exercises most helpfully and most efficiently for the entire class.**

By having a show of hands to discover how many pupils made errors on a given item of the exercise, locating the cause of the error, and then removing it by explanations in terms of the principle with which the exercise deals. The explanation may then be followed by a brief test or another exercise to check its adequacy. Criticism of individual exercises should supplement the group explanation wherever needed.

**3. How to administer the writing of different exercises and reports adapted to the needs of different groups during the class period.**

Whenever possible the same exercise should contain material adapted to the needs of the different groups. Pupils may then either work the whole exercise or be excused from those parts which present no difficulties. Where exercise materials are found in the textbook, each group may work on material suited to their needs and then confer with the teacher, one group at a time, when the exercise has been completed.

Unit reports may be written by each pupil on the same topic, which may well be the title of the unit. If a sufficient variety of references is at hand, the reports written in class will provide for individual interests and show how fully each pupil has mastered the unit. Different topics for report may be assigned whenever some particular aspect of the unit is more likely to benefit certain individuals.

**4. How to supervise pupils' work on written exercises and reports most efficiently.**

By explaining the purpose of the exercise or report and demonstrating the method of attack. When the exercise is understood, the teacher should

note the progress of the less able pupils and offer suggestions where necessary to help the pupil apply what he learns from the exercise to the work of the unit as a whole. Written reports on the unit are best directed by the teacher's questions concerning the scope of reading and the bearing of the facts selected upon the topic chosen.

**5. How to prevent pupils from idling over written exercises.**

By asking those not making satisfactory progress to state their difficulties. When the difficulties are real, they may be explained at once and privately. When the difficulties are imaginary, the fact will be evident when the pupil tries to state them.

## Type-Difficulty II. I[1]

### Vocabulary Studies

**Summary statement of principles.** Inaccuracy in the use of terms is an important cause of inaccuracy in thinking. It is accordingly wise to teach systematically whatever vocabulary is needed to discuss the materials and methods used.

Vocabulary difficulties are clearly of two kinds: namely, deficiencies in the pupils' reading and writing vocabularies in general, and deficiencies in the pupils' understanding of technical terms. The former presents greater difficulties from the teacher's standpoint since it can seldom be met without the coöperation of teachers in other subjects. A simple means of securing this coöperation is to designate the English department as the responsible authority to which words incorrectly used by a certain pupil are reported by each of the pupil's teachers. The teachers of English may then teach the pupil the correct use of the words in connection with written discussion of topics chosen from the subject matter of the different courses.

Technical terms should be taught by exercises in the particular course conducted shortly after the introduction of any new

[1] Related type-difficulties: *Section* III. H, M. *Section* IV. E.

material. Pupils may be directed to examine certain chapters in the textbook and to list all words not fully understood. Or the essential terms may be listed and given to pupils to define with the aid of a dictionary. Since ideas and vocabulary are so interdependent in the mind of the high-school pupil, the careful explanation and illustration of unfamiliar terms is often in itself a good introduction to the new material.

Incentives toward the enrichment of vocabulary can be supplied by teaching pupils to question their use of unfamiliar terms. The mechanical device of making two lists on the board, one of new terms correctly used and another of terms misused, often encourages pupils to become familiar with both lists and to experiment with new terms not listed. Attention to vocabulary should increase the attention paid to written work in general. To express ideas as clearly as possible implies attention to the essential requirements of form, — both in sentence structure and in the organization of the paper as a whole.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (II. 1)

**1. How to emphasize importance of adequate vocabulary as a means of clear thinking.**

By recording the statements of pupils which fail to convey clear meanings because of the vagueness of the terms used. The statements may then be compared with adequate statements containing more accurate descriptive terms. Pupils may then be assigned other inadequate statements to be improved by the substitution of more precise vocabulary.

**2. How to make word study effective.**

By encouraging the proper use of new terms, discouraging the use of commonplace and inaccurate expressions, and taking pains to demonstrate the necessity of precise terminology as a factor both in clear thinking and in clear expression. Frequent use of original vocabulary tests helps to emphasize the value of learning new words systematically.

**3. How to encourage use of the dictionary and lists of synonyms as means of improving choice of words in written work.**

By emphasizing the economy of precise terms rather than frequent exercises of the dictionary-drill type. This involves reference to the dictionary or list of synonyms as a means of finding out how certain ideas can be more briefly and adequately expressed. Sentences may be collected from pupils' written work which contain commonplace and colorless words. The class may then be directed to find and substitute stronger synonyms for the ineffective words. Frequent reading of pupils' work in which the choice of words is unusually good, is useful in motivating word study. Occasional discussion of interesting derivations also encourages use of the dictionary.

## Type-Difficulty II. J[1]

### Interrelating the Work of the Course

**Summary statement of principles.** The problem of so organizing and teaching a course that pupils will combine its various elements into a unified perspective of the whole is a problem involving both selection of subject matter and methods of teaching. For this reason the present comment very considerably overlaps a preceding comment upon the difficulty of Making Subject Matter Coherent (I. E). The present comment is to indicate the pupils' learning activities which unify the different elements of the course.

In adapting subject matter to the needs of the class, it is essential that pupils relate the course as a whole and its various units to typical life situations which they feel the importance of meeting successfully. In organizing the course the teacher selects as many such familiar life situations as possible and brings the subject matter to bear upon them. The practice of referring different types of subject matter to the same sort of situation makes the

[1] Related type-difficulties: *Section* I. C, D, E. *Section* II. B, C, H, K, O, P. *Section* III. E, J, K.

subject matter coherent. But there are definite limits to the teacher's ability to anticipate these life contacts. Essentially, the pupil himself must be brought to a state of mind in which he constantly seeks to apply the course to the better understanding of the world about him. In making unit assignments, this aim should be primary. Pupils should be regularly challenged to supply genuine reasons for their study of any subject matter. The teacher is responsible for illustrations which suggest the main types of applications to be made, but the pupil is responsible for the specific application of principles to familiar life experiences that gives the principles a real and useful meaning.

When pupils have acquired the outward look which seeks life applications for subject matter, the teacher can do much to clarify the applications suggested. When pupils refer in class to certain applications, the teacher may draw out the pupil's information by questioning and point out in greater detail how the subject matter of the course does apply to the situation described. The pupil's own statement of the applications he sees may be so treated as to show wherein he has failed to take account of other material contained in the course that applies well to the situation.

The effect of such discussions can be made more definite by means of written exercises and reports. The exercise need simply describe a significant life situation, preferably one that calls for improvement or remedy; then challenge the class to select from the subject matter whatever principles or information may be used to explain or remedy the situation. The same sort of guidance may be given during supervision of individual study, the pupil being encouraged to organize his written reports upon reading and other work from the standpoint of life situations.

Review work and testing may, and usually should, be conducted on the same basis. A significant problem involving the principle studied is clearly defined and pupils are challenged to meet the

problem by selecting pertinent material from the preceding work of the course. The relation of life situations to subject matter, as above suggested, serves not merely to interrelate the various elements of the course in a unified whole. It serves also to organize the material so as better to suggest the uses which pupils can make of it, thereby increasing its value to the individual pupil.

The mechanical aspects of class management may be utilized to interrelate the course in the keeping of notebooks and preparation of texts. The notebook should encourage the systematic collection of life situations that apply to the several units of the course. Tests of pupils' abilities to apply the material to problems taken from their familiar experience should be frequent and should be prepared with reference to one general principle at a time. Testing for the purpose of interrelating the course should require little in the way of book information, but should require much reflective thinking upon the broad interpretation of information gained. The tests should consist of type problems which the pupil is required to analyze by applying several principles in proper combination.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (II. J)

**1. How to relate units of the course to pupils' experience.**

By requiring pupils to collect (in notebooks) and to report whatever they observe out of class that is relevant to the materials studied. By making frequent illustrations in terms of life situations and expecting pupils to do the same.

**2. How to connect units of the course so that pupils may have perspective of the course as a whole.**

By habitually requiring the application of subject matter to life situations, by suggesting applications during supervision of study, by discussing pupils' observations in terms of the course as a whole, and by basing review work and testing upon the relation of subject matter to broad life problems. In

academic courses such as algebra, where specific life applications are hard to find, the perspective should be based upon clearly presented uses of the subject as a whole. Extended written reports tend to give perspective.

**3. How to help pupils recognize principles previously studied when they reappear in new material.**

By frequent reference to principles previously studied in explaining new principles or any new material. Such recognition requires time as well as practice. Individual study is usually the class procedure which gives the most useful practice in selecting, from materials previously studied, whatever helps most in dealing with new material.

**4. How to organize material into units that will serve to connect pupils' ideas in useful relationships.**

The construction of units that are psychologically adequate is largely a matter of experiment. The first essential is to discover life situations familiar to the pupils to which the principles of the course apply. Almost any classification of these situations according to type is likely to suggest units that are superior to the chapters of the conventional textbook. Useful relationships become clear when the pupils naturally think *from* the life situation *to* the book rather than from the book to the life situation.

**5. How to construct exercises that will require pupils to select parts of the subject matter having common elements.**

By selecting a life problem not too remote from the subject matter studied and requiring pupils to select whatever material applies to the fuller understanding or solution of the problem. (See Appendix F.)

## Type-Difficulty II. K [1]

### Study Supervision and Direction

**Summary statement of principles.** To offer any concrete description of procedures in directing individual study is clearly impossible unless each high-school subject is taken by itself.

[1] Related type-difficulties: *Section* I. C, D, E, F, H, I, J. *Section* II. G, H, J, P. *Section* III. E, F. *Section* IV. A, B, C.

The plan of the present discussion prevents the separate treatment of each subject. Procedures most useful in directing individual study of a particular subject must therefore be selected from the procedures mentioned in the cross-references and supplemented by the literature upon the teaching of the particular subject. All that shall be attempted here is to suggest the procedures reported that are efficient methods of directing study in general.

The principle most stressed in the returns is the necessity of providing sufficient time for what Professor Morrison terms "assimilation"; namely, the assimilation by the pupil of whatever information will best help him to form an intelligent attitude toward the principles or problems studied. Assimilation implies critical reading or laboratory work until the pupil has become largely independent of the immediate sources of his information and has learned to apply the information effectively to the better understanding and use of the principles. Thus, subject matter is adapted to the needs of the class largely by the pupils' assimilating whatever they can use from a wide variety of sources to explain the unitary principle more fully. The coherence of the ideas obtained from these sources is based upon a standing assignment for the unit. The standing assignment obliges pupils to select from reading and other sources whatever will help to interpret and apply the principles about which the units (or divisions of subject matter) are organized. Hence, the teacher's function in this phase of study supervision is somewhat passive. His activities are confined for the most part to the clear and brief explanation of the organizing principles of the work, to suggesting exercises and reading materials which the difficulties of individual pupils seem to require, to supplementing the material provided by whatever explanation may be necessary to show its use and value, and

by directing the organization of the material in some form of individual report.

Another principle of general importance concerns the desirability of interrupting individual study for the explanation of common difficulties. If the predominant classroom activity is individual study rather than oral recitation, the solitary study needs to be interrupted occasionally by exercises requiring the attention of the entire group, if only to relieve monotony. Oral exercises have, therefore, a place in the direction of individual study. Oral exercises may serve to establish a coöperative atmosphere and to provide any necessary group instruction in specific methods of study. The difficulty to be constantly avoided, however, is the pupils' tendency to substitute talking or listening for constructive thinking. The difficulty is largely met when the period is devoted largely and primarily to individual study; the study to be relieved by oral exercises and recitations whenever the pupils' progress demands group explanation, individual oral reporting, group discussion, or testing. When individual study is directed by the teacher's guidance in clearly defined tasks, the effect of the guidance should be to increase the pupil's initiative and ability to give continued attention.

### SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (II. K)

**1. How to direct individual pupils or groups without loss of time for the rest of the class.**

Assuming that each pupil knows what to do and is supplied with the necessary materials, the teacher may have pupils come to him for needed explanations, or the teacher may supervise the work of pupils at their seats who are likely to need direction. The rest of the class need not be affected in either case. An efficiently directed study period is impossible unless each pupil knows how to keep himself profitably occupied for at least one period ahead.

**2. What to do when the class has failed to understand the assignment.**

Repeat the assignment, select a sample problem and demonstrate the solution, and then allow the class to proceed with the assignment under supervision. If the assignment is well chosen, all misunderstanding may be removed by further explanation of such difficulties as are encountered by individuals when the class undertakes to prepare the assignment in the classroom. Brief study assignments should be written and left on the board for pupils to refer to whenever they lose their sense of direction.

**3. How to encourage pupils to take notes useful to them.**

By frequent exercises in efficient note taking, also by the standing requirement of some form of report which obliges pupils to summarize readings and supply references to sources.

**4. What devices are helpful in the attempt to make reading assignments interesting?**

Such devices to be effective must of course apply specifically to the particular reading. They should therefore be collected from literature on methods of teaching the subject and from other successful teachers. In general, the pupils' interest should be assumed in any reading which provides material for individual reports and for the satisfaction of other course requirements. The teacher must convince the class, by frequent demonstration, that the "requirements" themselves are worth meeting. Silent reading tests help to locate deficiencies in reading ability common to different groups and encourage effort to remove them. When the teacher has identified pupils who do not read easily, the readings assigned to these pupils may be adapted to their abilities.

**5. To what extent is it possible to adapt assignments to individual needs without injustice to the less able pupils who need drills from which others are excused?**

This difficulty is largely offset by the unit assignment as against the daily lesson assignment. When the assignment consists simply in directing each pupil to collect whatever information helps him most to understand

and report in writing upon a given principle, the individual needs are met without injustice of any sort. No drills should be assigned unless they are needed and should always be assigned when they are needed.

### 6. How to provide for differences in rate and comprehension of reading in making assignments of reading material.

By permitting each pupil to read at whatever rate his abilities and familiarity with the material permit. Pupils who have not learned to read efficiently should receive individual instruction in reading. Their difficulties should be met where possible by individual assignments. The teacher's guidance of pupils' reading upon the unit is mainly concerned with increasing their comprehension of the material. The unit assignment as opposed to the daily lesson assignment allows for normal differences in reading ability.

### 7. What allowance should be made for pupils who have not proper facilities for study at home, and how can they best make up deficiencies?

The use of class time for study renders home study less necessary. When pupils have learned how to study independently they may be encouraged, but seldom required, to study elsewhere in school or at home if proper facilities are available. When the school regulations virtually require home study, the teacher should assign only such work as pupils have shown ability to handle alone.

### 8. How to provide efficient instruction in study methods.

By preparing a list of directions from the various how-to-study books or, preferably, working out an original list from suggestions given by pupils. Refer to these directions specifically when explaining methods of attacking new material. Conduct practice exercises for those pupils who work inefficiently because they do not understand or fail to follow the directions.

### 9. How to alternate explanation and study effectively.

By interrupting individual study for explanation whenever and to whomever a point needs to be explained.

## Type-Difficulty II. L[1]

### Adequacy of Explanation

**Summary statement of principles.** The adequacy of any explanation depends entirely upon the relation between what is explained and what the pupil needs to know. The size of the audience thus determines how adequate any explanation can be. To explain a complicated point to thirty pupils at once is inefficient since the teacher can never tell whether the explanation is too complete or not complete enough for the individual pupils concerned. The most to be expected under these circumstances is that the teacher will use whatever information he has concerning the difficulties of a majority of the class and organize the explanation so as to bear most directly upon the point of common difficulty. Yet no explanation is entirely adequate except when made by a skillful teacher to an individual pupil after the latter has shown what he fails to understand about the point at issue.

Considered from this point of view, the making of adequate explanations involves thorough command of the subject, familiarity with the pupils' present acquaintance with the topic and related matters, facility in presenting ideas so that pupils may grasp them easily, and good judgment in selecting meaningful illustrations. The procedure in making explanations should be to confine the audience to a single pupil or a small group of pupils who are confused upon a given point. The audience should then be questioned for the purpose of finding out how near to the correct explanation each one can come independently. The necessary explanation by the teacher can thus be accurately adapted to the need.

[1] Related type-difficulties: *Section* I. A, C, D, E, G, J. *Section* II. B, G, H, K, O. *Section* III. E. *Section* IV. A, B, C.

When individual difficulties are discovered by the teacher in supervising study, the direct explanation should be adequate because the pupil's difficulty is defined. There is no reason for either a shortage or excess of detail, provided the teacher is clear in his own thinking. When the need for further explanation arises after a general explanation to the class as a whole, another oral explanation may be sufficient. A better procedure here is to set the entire class an oral or written exercise that requires each pupil to apply the general explanation to a number of specific examples. When the exercise has been completed, each example may be checked by each pupil as the teacher reads the correct responses. The examples that individual pupils have failed to handle correctly may then be explained with far greater economy of the teacher's effort. Explanations of troublesome points in review work involve the same principle. Set the class an exercise upon the troublesome point; then follow with explanations of specific errors in the exercise which are made by a majority of the class. Errors made by individual pupils only should be explained to the individuals privately.

The coöperative atmosphere of a classroom is much affected for better or worse by the adequacy of a teacher's explanations. Boredom, resulting from over-explanation of obvious matters, and confusion, resulting from insufficient explanation, tend to destroy class morale. Coöperation is encouraged by demanding close attention while new work is being presented or a general principle explained, then by confining follow-up explanations to individual pupils in terms of their immediate difficulties in applying the general explanation. The more the teacher stimulates pupils to work out their own explanations, the easier it is to make explanations adequate. Explanations made to the class are too detailed for some pupils and too brief for others.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (II. L)

**1. How to develop a point in sufficient detail with neither shortage nor excess.**

By organizing the explanation with direct reference to what the audience does not know and in terms of the specific pupil difficulties which require the explanation. Tests will show whether the explanation has fallen short. The pupils' attitude will show when the explanation is too detailed and also when examples are effective.

**2. How to keep the attention of bright pupils during explanation needed by slow pupils, and vice versa.**

The explanation should be confined to the pupils who need it. When the same explanation is needed by several pupils, it may be given for their benefit in a conversational tone of voice. All pupils who need the explanation then may listen; those who do not need it may proceed with their work.

**3. What to do when unable to answer a pupil's question.**

The procedure naturally depends upon the circumstances. Ordinarily a teacher would admit his ignorance and either look up the information himself or direct the pupil to look it up. The significance of the question and the ease of finding the answer would determine how to proceed. It is seldom wise to try to bluff a pupil.

**4. How to check the adequacy of explanations.**

Preferably by written exercises or tests which require the pupils concerned to apply the explanation to specific problems.

**5. How to tell when a point should be explained by the teacher and when the class should be required to work out the explanation.**

By finding out what proportion of the class needs to have the point explained, how useful the experience of working out the explanation is likely to prove, and how much time might be saved for more important work

if the teacher were to explain the point himself. As applied to the individual explanation, the teacher may safely adopt the policy of explaining only what the given pupil needs to know in order to solve his own difficulties.

## Type-Difficulty II. M [1]

### Organizing Ideas by Outlining

**Summary statement of principles.** Practice in the logical organization of ideas is essential to the pupils' command of subject matter. It is the more important because few pupils appreciate the economy of outlining unless it is systematically taught. The difficulty from the pupils' standpoint is usually that they are expected to produce outlines according to a set form. The form often presents more difficulties than the value of the outline seems to justify. The purpose of teaching outlining is accomplished when pupils prepare outlines voluntarily, whether or not the form meets the requirements of a lawyer's brief.

An essential factor in teaching outlining is to make the outline simple in structure and adapt it to the needs of the pupil who is to use it. Opportunities to practice the useful organization of materials are suggested by almost any phase of class work. Pupils' oral reports or incidental remarks may be outlined by all pupils to suggest a more logical form, and the outlines may then be compared and discussed. Individual study reports based upon reading of references may be outlined by the pupil and criticized by the class or by the teacher from the standpoint of proper sequence and subordination. Specific drills may be based upon the outlining of familiar topics, or of topics yet to be studied which pupils know something about. Ability to outline should be informally tested by having pupils show by brief outlines how each would organize the discussion

[1] Related type-difficulties: *Section* I. C, D, E. *Section* II. E, K, N, P. *Section* III. F, K. *Section* IV. A, E.

of a list of familiar topics. The pupil will readily perceive the importance of outlining when he has been taught the importance of keeping discussion to the point.

Since the ability to draft clear outlines implies the ability to organize ideas for any purpose, it is the function of each department to teach outlining. Pupils will coöperate when they are convinced that a topical outline contributes not merely to the improvement of written work but also to their ability to think to the point of *any* problem.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (H. M)

**1. How to train pupils to organize written work by outlining it in advance.**

By rejecting written work that is deficient in organization until satisfactorily organized by the pupil himself. It is assumed that the class has been taught the essentials of simple outlining.

**2. How to help pupils organize and summarize reading matter by outlining.**

By requiring reports on readings that are so organized as to be clear to pupils who have not read the original material. The teacher may prepare sample outlines to demonstrate logical arrangement of certain topics and these may be followed until pupils have learned to make their own outlines better adapted to the particular material. Practice in outlining is easily given by reading an article aloud to the class, having the pupils outline it, and then discussing the points of disagreement.

**3. How to teach pupils to use ready-made outlines as study helps.**

By planning simple experiments to show the greater ease with which organized material can be understood and applied to particular problems. The ready-made outline should be discarded in favor of the pupils' own outlines when the pupils are able to make their own. A skeleton outline containing major headings only is a useful device to encourage pupils to fill

in the topics studied as each major heading is covered. In a period devoted to general discussion for summary of the work, it is well to have pupils outline the major points and write this outline on the board. Individual pupils may then talk to this outline, thereby learning the economy and value of outlining.

**4. How to teach pupils to make outlines voluntarily.**

By permitting and encouraging pupils to submit any written work in outline form when there is no need for writing a connected discourse. The economy of outlining as a means of presenting clearly what one has to say, will then become apparent. Frequent practice will establish the fact that briefs are used in business and the professions whenever possible in view of their greater clarity and ease of preparation.

## Type-Difficulty II. N[1]

### Drill Work

**Summary statement of principles.** The essential considerations in directing pupils' practice or drill exercises are that the exercises be selected according to the needs of the class, that the pupils recognize their need, that the pupils have some definite standard by which to measure their improvement in a given skill, and that pupils be excused from the drill whenever their test performances show that they have met the standard set.

To adapt the drill work to the needs of the class implies that the teacher determines by appropriate tests the particular skills in which the class needs to improve. Certain skills must be acquired in order to deal with the materials on which the work is based, such as methods of study and methods of using new types of material. Other skills are of sufficient value in themselves to constitute objectives. When these skills have been selected for practice, the practice should be organized on an individual basis. Pupils who have already mastered a certain skill

[1] Related type-difficulties: *Section* I. C, D, G, H, I, J. *Section* II. B, G, H, O, P. *Section* III. E, K. *Section* IV. A, B. *Section* V. G.

sufficiently to apply it successfully should be given practice upon other skills in which they are deficient. A pupil who has learned how to use a library catalogue, for example, should be given practice in the taking of notes or in some other activity in which he is weak. If exercises are prepared for each of the activities in which pupils are likely to require practice, the exercises may be assigned to different individuals during the same period on the basis of individual deficiencies. It is assumed, of course, that the different exercises so assigned involve a common principle or are related to the same type of work.

Aimlessness renders all drill work futile. It is therefore necessary that the purpose and the method of working each exercise be clearly explained. It is also necessary that the exercise consist of concrete examples rather than general rules of procedure. An efficient exercise requires pupils to practice a given skill in the way it will be applied. When the textbook contains few exercises that meet this requirement, the text must be supplemented by exercises constructed by the teacher.

Practice work should, in general, be written unless, of course, the purpose be to develop skill in speech. Oral questioning is usually inefficient as a means of giving practice to several pupils at the same time. For this reason, the conventional oral recitation is a wasteful form of drill. Review work should be written when the purpose is to develop skill in finding relationships in the various topics covered and in summarizing the work from new angles. A general rule in conducting drill of any sort is to test the pupil's mastery of the skill desired; then to devise written exercises on which each pupil may work independently toward the improvement of one skill at a time. In directing the individual work, the teacher can detect those pupils who appear to be working aimlessly. The aimlessness may then be removed either by demonstrating more clearly the pupil's need for the

practice or by modifying the exercise to give it more meaning in terms of the pupils' work.

The pupil's attention to drill work of any kind should be undivided. Fitful and wandering attention prevents the forming of the desired habit. Hence, periods of drill should be brief and should be motivated by any device which is not so artificial as to distract the pupil's mind from his improvement in the given skill. Class coöperation is fostered by reducing unnecessary drill work to a minimum and by selecting helpful devices. Coöperation may also be directly taught by demonstrating the need for perseverance in acquiring any skill worth having. This type of instruction is most needed by pupils who are above standard in certain skills and conspicuously below in others, that is, by pupils whose abilities are uneven.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (II. N)

**1. How to add interest to drill work.**

By demonstrating its value, by introducing competitive features when appropriate, and by setting up definite models or standards to stimulate self-competition or group competition. An abundance of concrete illustrative material, — *e.g.*, wall maps, charts, flash cards, apparatus, mimeographed exercises, and other forms, — helps to emphasize the particular skill to be learned, and to reduce the amount of writing pupils must do to obtain the necessary practice.

**2. How to determine the amount and kind of drill work needed in a particular course.**

The amount of drill work needed may be determined by preparing tests which a pupil may volunteer to take whenever he feels he has practiced enough. The kinds of drill work needed in a particular course are determined essentially by the use that pupils will later make of such skills and habits as the drill might develop. It is unnecessary to drill pupils upon material that they do not need to know mechanically in order to use the material later.

**3. How to make the pupil conscious of the purpose of drill exercises and so prevent aimless repetition.**

By demonstrating the fact that the purpose of the unit cannot be accomplished until certain skills have been acquired. When the skills are useful in themselves, as should normally be the case, their use may be demonstrated in terms of familiar activities in daily life. Frequent references to objective standards of proficiency help to focus attention on the mastery of the skill as such and thereby economize practice.

**4. How useful are drill exercises that are worked at home or without the teacher's supervision?**

The value of practice exercises performed out of class depends entirely upon the pupil's earnestness of purpose and ability to check his own errors. Practice which involves repetition of errors is obviously worse than no practice at all. When practice exercises have been successfully begun in class, they may often be continued out of class to the pupils' advantage.

**5. How to find exercise material for drill purposes to supplement material in the textbook when this is insufficient for certain pupils in the class.**

The sources of such material obviously depend upon the subject. Supplementary materials are often suggested by analyzing a general skill — such as organizing material for reports, into its various elements, — outlining, selecting illustrations, making footnotes, and the like. Supplementary materials may also be obtained from other textbooks, other teachers of the subject, and from special method literature.

**6. How to regulate the amount of drill work in proportion to the relative weaknesses of individual pupils.**

By testing, as suggested in No. 2. Specific drills should be prepared for each kind of weakness revealed by the tests.

**7. How to find practice exercises that are efficient in teaching command of fundamental principles.**

By selecting exercises from the various sources mentioned in No. 5 and splitting them up into their component parts. Exercises found in texts

which apply to the teaching of a fundamental principle usually contain items of different types. The principle is sometimes more efficiently taught when each type is expanded by the addition of similar material and practiced one at a time. When one type of material has been mastered, another type is practiced until the given principle is mastered by combining all of the elements.

**8. How to prevent the extra drill work required of slow pupils from being regarded as a punishment.**

By demonstrating the fact that practice is useless unless carried to the point where the skill has been mastered and can be successfully applied. There is no injustice in allowing pupils who have mastered a given skill to proceed with other work.

**9. How to drill pupils in the selection of essential points from non-essentials.**

Present a list of the "points" arranged without reference to relative importance. The "points" may then be ranked by all pupils in order of relative importance. The rankings may then be compared and reasons given to explain any significant differences of opinion as to which are essential and which are non-essential.

## Type-Difficulty II. O[1]

### Review

**Summary statement of principles.** A review exercise should comprise considerably more than mere repetition of work already covered, although repetition is of course involved. Reviewing is essentially an effort by the pupil to organize the material so that he can comprehend it more clearly as a whole and therefore refer to it more easily later. When a unit of work has once been covered, the pupil is better able to recognize items that he needs to understand more fully. He is also better able to work through

[1] Related type-difficulties: *Section* I. C, D, E, I. *Section* II. B, F, J, N. *Section* III. D, E, J, K. *Section* IV. B, C.

the material again from the standpoint of his own interests and needs.

Adapting review work to the needs of the class implies that the teacher assigns material for special study that any part of the class has not fully understood. A review of some sort should normally follow any test that reveals misunderstandings of significant points. Reviews should also be adapted to individual needs for practice in organizing material studied independently, into a coherent whole. This need is distinct from the need for more study of the same material. In learning a new unit the pupil naturally accepts the organization of material worked out by the teacher. In reviewing a unit in the content subjects, however, the pupils should be encouraged to approach the material from a different angle, as in making an oral or written report. He thus has the experience of selecting from the material as a whole whatever applies to the single topic assigned. By this selection and organization of material he obtains practice in precisely the sort of thinking which anyone has to do in applying the results of study to the analysis of a given problem.

The work of any class period should normally include some questioning by the teacher to relate the present work to what has preceded. The economy of the unit assignment, covering a week or more of class work, consists in providing for this interrelation of material. The pupil's main business in the long unit assignment is to combine the ideas gained from various sources into a well-organized whole. However, the pupil engaged on a particular exercise or a single item of reading will sometimes lose the thread. It is here that the teacher's question concerning related material already covered may serve as a sort of progressive daily review that helps the pupil to associate new and old material as he proceeds.

Oral and written reports also serve this purpose of knitting related materials more closely together. The organization of the report helps the pupil to secure a clearer perspective of the topic, and the subsequent discussion of the report supplies whatever other material of the unit or preceding units is needed to supplement the material presented.

Drill work in most subjects is review on a small scale and at short range. It should not, however, become confused in the teacher's mind with the aspect of review suggested above. Review exercises are most effective when they require reflective thinking to select materials that relate to some given topic or problem. Reviewing is thus distinct from the mechanical repetition which is characteristic of drill.

The mechanics of class management that apply to review work are the direction of individual work, use of notebooks, and preparation of tests. Where individual study is directed in part by guide sheets, the teacher can readily supply cross references on the guide sheet to show interconnections between seemingly distinct items. When pupils' individual study is directed by brief individual conferences, the cross-references can be supplied as the occasion demands.

Notebooks are useful as a record of ideas obtained in other classes and out-of-school which relate to various units. When pupils are challenged to collect this material without its being made a formal requirement, the organizing function of review is provided.

Tests are helpful in stimulating review when the substance of the test is clearly understood in advance. Whatever justification there may be for the traditional final examination in high-school courses consists in the stimulus to careful reviewing. Tests based on the work of a given unit serve the same purpose more economically. When announced in advance, the test is a

useful device for review, but less efficient as a basis for estimating the scope and permanence of the pupils' learning.

The problem of holding attention to review work is largely a matter of the teacher's ingenuity in suggesting new methods of approaching familiar material. It is usually possible to select new exercises that lend variety to the familiar subject matter. If, by the novelty of approach or other means, the pupil's initiative is aroused toward making his own review on a systematic basis, the results are likely to prove more satisfactory than when the teacher supplies the organization.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (II. 0)

**1. How to determine the relative importance of topics in a given unit for purposes of review.**

By judging the relative importance of each topic in relation to the purpose of the unit and the relative difficulty of each topic as indicated by tests.

**2. How to direct review work in such a manner that points needing emphasis are stressed without giving the class a wrong perspective of the unit as a whole.**

By stressing such points in their relation to the central principles of the unit. The proper "perspective" from which the work should be viewed should be determined by the unit itself. The purpose of the unit organization is to establish the right perspective.

**3. What constitutes an efficient review procedure?**

An efficient review procedure consists of some diagnosis of pupils' individual difficulties and the construction of exercises to remove these difficulties. The exercise should require pupils to apply what they have learned from the unit as a whole, to certain definite problems. How efficient the review is can be determined only by adequate testing upon the unit as a whole after the exercises have been completed.

**4. How to train pupils to review work daily.**

By systematic use of references to previous work whether contained in assignments, written on guide sheets, suggested by class discussion, or proposed by the teacher to individual pupils during supervision of study.

**5. How to encourage pupils to indicate points on which they feel the need of review.**

By tactful questioning during study supervision, by use of pupil notebooks, and by pupils' voluntary conferences encouraged by the teacher's standing offer to assist pupils in difficulty.

**6. How to introduce novelty in review work.**

By devising problems based on situations familiar to the class which are to be solved by applying the principles studied, as in the "original" problems of plane geometry. Novelty may be introduced by dividing up various different approaches to the work among the class, and assigning them to individuals or groups for special preparation and report. Other devices for securing novelty may be obtained in any desired number from other teachers and special-method literature, or by experimenting with various types of review exercises which the teacher may invent.

**7. How to use reviews as means of helping a class to concentrate upon a certain section of the course and to organize it more clearly.**

As suggested above, by proposing a problem that requires review of the unit or several units in order to select material which bears upon the given problem. If the section on which the class needs to concentrate has been revealed by a group test, the section presumably needs further explanation by the teacher and further study by the class.

## Type-Difficulty II. P[1]

### Testing

**Summary statement of principles.** The primary purposes of testing are to determine what pupils already know about material

[1] Related type-difficulties: *Section* I. C, D, E, I. *Section* II. B, J, K, N, O. *Section* III. K, M. *Section* IV. A, C, J.

to be taught and how well they have mastered material that has been taught. Tests of some sort are as necessary in advance of teaching as they are after teaching. Diagnostic testing is required in adapting subject matter to the needs of the class. The tests may well consist of a list of important terms from which the pupil checks and explains the terms that are familiar. Other useful forms of pre-test include tests of the best-answer type, which reveal ability to judge and select; tests of the false-true type, which indicate acquaintance with important facts; and tests of the essay type, which show the pupils' ability to discuss the subject in its more general aspects.

Tests for the purpose of estimating progress should be supplemented by systematic and recorded observations of the pupil at work. Supervision of individual study and of the pupil's performance in all other class activities offers a better opportunity to evaluate his learning than any battery of formal tests without such observation. Informal questioning to discover pupils' difficulties helps in clarifying assignments and in making different aspects of the work coherent. These incidental indications by the pupil of any significant attitudes or abilities should be recorded with as much care as his scores on group tests. By such indications the teacher discovers those parts of the work which need to be emphasized for certain pupils.

Group tests of some sort should regularly precede and follow drill work. They should precede it in order to select those pupils who require practice on particular skills. Tests should follow drill exercises in order to discover when the practice has produced the desired results. Tests are useful in motivating individual reviews of a given unit when the pupil knows what sort of test to expect. By preparing tests of different types, the teacher can directly influence the type of review that the pupil makes in preparing for the test. Tests should invariably be

followed by review of some sort, even if no more is required than the pupil's discovery and correction of his mistakes.

In directing pupils' learning activities, testing is an influential factor. Testing for the sake of testing will forestall the pupils' coöperation in the work of the course. Testing, which pupils see to be a means of adapting work more closely to their needs, will stimulate coöperation. It is accordingly important that the type of test, the selection and frequency of times for testing, and the purpose of testing be such as will arouse pupils' initiative to the fullest degree. The more nearly the test situation approximates normal learning situations, the less likely are pupils to feel on the defensive. It is entirely possible to devise tests of such a character that pupils like to take them, both from interest in showing what they can do and from a desire to find out their weaknesses. Tests of this character discourage dishonesty which proceeds from natural desire to escape unprofitable labor.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (II. P)

**1. How to decide when group tests should be given.**

By analyzing each phase of the pupils' work to determine what types of work can be tested by group tests. This means that the desired outcomes of the unit should be divided between those which may be adequately tested by group tests and those which can merely be evaluated by observing the individual pupil at work. Tests should then be given both before and after the study of any type of work that can be so tested.

**2. How to use tests to find out weaknesses in pupils' methods of study.**

Group tests of pupils' study methods are less useful than observation of the pupil at work. Tests may, however, be devised that are similar to published tests of pupils' study methods.[1] Such tests, in general, are little

[1] For example see "*Study Tests in Rochester Junior High Schools*," *School Review*, March, 1920; also W. A. Wiley, "*Exercises in Supervised Study and Assimilative Reading*," Cedar Falls, Iowa.

more than tests of silent-reading ability, hence any good test of silent reading in its larger phases may be used. Other study activities in a given subject should be listed in detail, such as note-taking, using library indexes, using the dictionary, and the like. Exercises may then be based upon each type of activity which will reveal weaknesses in the particular activity and also give practice in overcoming the weakness. Exercises of this kind should, of course, be based upon the actual subject matter studied.

**3. How to construct tests to indicate how much a class already knows about material before it has been taken up in class.**

By using a published diagnostic test when one is available for the given course. Such "ready-made" tests necessarily apply to the subject or course as a whole. Pretests for a given unit or part of the course must be prepared by the teacher. The form and content of pretests for a particular unit will depend upon how familiar the class is with the material before it has been studied. When the subject matter has appeared to some extent in other courses, in the pupils' free reading, or in his experience out of school, the pretest may be more definite than when the material is entirely new. Familiar material may be pretested to advantage by tests of the best-answer or true-false types; for unfamiliar material, a vocabulary test of important terms, or an essay test, is perhaps more appropriate.

**4. How to make tests which the pupils consider practical, — *i.e.*, which require them to apply what they have learned as it would be applied out of school.**

By basing the tests upon familiar out-of-school situations to which the subject matter applies. Care must be taken to prevent the application from being either too artificial or too general, so that the test does not measure the pupil's resourcefulness rather than his understanding of the subject matter itself.

**5. How to make tests that call for limited responses and which also do more than test the pupils' ability to remember facts.**

Some form of the best-answer test may be so constructed as to meet these conditions. When the test contains no answers to a given question or problem which are obviously wide of the mark, the pupil must do a considerable amount of critical thinking in order to check the best answer. Alternate-response or true-false tests may also require careful judgment.

**6. How to prevent some pupils from taking their marks on tests too seriously and from paying no attention to their weaknesses in the work either before or after the test.**

The best remedy here would be to give no marks at all, merely allowing those pupils to proceed who have completed their work satisfactorily and requiring all other pupils to make up their deficiencies. When the school regulations prevent this procedure, pupils who work for marks rather than for learning may have their marks withheld until their deficiencies have been corrected.

**7. How to select questions of the proper degree of difficulty.**

The relative difficulty of questions on a given test cannot be determined for a particular class until the test has been taken. When the test has been taken, the number of pupils failing to answer any one question correctly indicates the relative difficulty of that question for the class. In selecting questions for a test, it is less important for the teacher to know their relative difficulty in advance than to be sure that some questions are included which all pupils can answer. "Proper degree of difficulty" should mean that the question is presented in such manner that any pupil can make a beginning in attempting to answer it. The completeness of his answer should reveal the adequacy of his learning.

**8. How to make a test well balanced, — *i.e.*, how to make it cover all essential phases of the material tested.**

The construction of a "well-balanced" test is simplified by recording the difficulties met by the pupils in the work tested. If all significant difficulties are represented in the test exercise, there is small danger that significant phases of the content have been overlooked.

**9. How to make tests interesting.**

By collecting a variety of life situations or problems that challenge the pupils' common sense, as well as their command of the subject matter. High-school pupils have been found to prefer the true-false type of test when asked for preferences. Any form is satisfactory that can be objectively scored.

## SECTION III

## DIFFICULTIES IN THE ROUTINE DUTIES OF CLASS MANAGEMENT

### Summary Comment Concerning the Type-Difficulties of This Section

*Analyze the work of the course to determine the pupil activities that make for successful learning and economy of the teacher's time. Plan the most efficient methods by which pupils can perform the activities; then teach such methods to the class and require them to be applied systematically as class routines.*

Teaching and class management are hard to distinguish. Efficient class management includes many activities that are essential factors in teaching. Efficient class-management, moreover, is based on the theory that pupils need to be *taught* various routine classroom activities with the same degree of thoroughness that they need to be taught the subject matter itself. That is, unless the teacher systematically teaches pupils how to listen to oral presentation, how to concentrate, how to distribute supplies, how to work according to schedule, and the like, the burden of class management becomes increasingly heavy and the class fails to learn what should be an important part of the training.

The type-difficulties of this section may be divided into two groups. The first group includes activities that are more readily standardized. The activities present no serious difficulty when once the teacher has taught the class an efficient method of

performing them. The other group contains difficulties that are more closely related to teaching procedures. Such difficulties are consequently less readily met by standardized methods, since the method must in each case be specifically adapted to the given teaching situation.

Of the first group, the teacher's use of English is one of several factors that combine to determine the educational value of class management. The use of English which is simple and direct, free from bookishness or slang, and adapted to the given audience, adds much to the efficiency of routine activities. The teacher should record and have certain friends check English errors that require daily practice.

Pupils' names should be memorized as promptly as possible by daily practice in associating names with faces. Ability to call pupils by name helps to establish a natural atmosphere and prevents disorder.

Pupils should be taught to begin work promptly by specific instructions and daily practice in such matters as laying out materials, forming a clear idea of the results to be reached, and planning the work of the period. Routines should be devised for the preparation, distribution, and collection of supplies and materials. The larger the pupil's responsibility for the routine, the better.

The administration of oral reports and recitations may sometimes be routinized in certain respects. Oral reports and floor talks should be planned by and for the class. The routine procedure should require the speaker to hold his audience and the audience to challenge the speaker.

The notebook should be an incentive toward the collection and recording of important data from outside sources that would not otherwise be available. Pupils should bear major responsibility for the form and contents of the notebook, as a cumulative

report of progress. Note-taking can be standardized according to its purposes in the given course.

While the assignment of pupils' marks should never be routinized, there are many ways in which the difficulties arising from pupils' marks may be avoided by class regulations. Large economy results from the use of objective standards. Fewer marks need to be given when pupils can be taught to find their own mistakes. When the basis of marking has been standardized and clearly explained, pupils are less likely to find fault.

The common element in the above operations is the possibility of standardizing them so soon as efficient procedures have been determined by experiment in the particular class. The remaining type-difficulties of this section are less responsive to standardized routines. The teaching procedures involved, however, may be more readily systematized than the procedures discussed in Section II.

The mechanics of questioning, for example, are well understood and may be found in any standard book of reference for experimental selection in a given class. Such matters as the futility of the guess-what-I-am-thinking-of type of question, the deadening effect of the question-answer procedure as applied to an entire class, the necessity of adapting the type of question to the amount of thought required, the value of the personal question as a means of helping the individual pupil locate his difficulties, and other established facts should determine the mechanics of questioning. Considered specifically as a device for class management, the question, when abused or used to excess, is responsible for the variety of teaching difficulties resulting from formal instruction that fails to take account of individual needs. Conversely, the skillful use of questioning may prevent difficulties in class control by redirecting the interest and attention of individual pupils to their work.

When the greater part of each period is given to productive study by each pupil, the success of class management depends upon the teacher's efficiency in directing individual work. Since most methods of directing individual work depend upon the pupil's needs and, accordingly, vary with each pupil, it is important to teach pupils as a group to define and attack their individual difficulties before appealing to the teacher for aid. This degree of pupil independence is more readily taught if group assignments are made at the proper times, which is to say, whenever the group assignments are needed. Whenever a common difficulty is observed, the teacher saves much time and confusion by briefly explaining the best method of attacking it to the class as a whole.

The improvement of pupils' English may be systematized to the extent of posting the more frequent errors, applying standard incentives to help pupils recognize their own errors, and applying routine practice exercises to eliminate errors made unconsciously by certain pupils.

The preparation of tests may be systematized by collecting problems based on familiar life situations and involving the principles studied in the course. A supply of such problems greatly simplifies the mechanical work of constructing objective tests. The correction of tests and other papers should be made by pupils as far as possible. Rules may be presented to guide this correction which will serve both to teach pupils to check their own work, and also to relieve the teacher of unnecessary labor.

## Type-Difficulty III. A[1]

### Teacher's Use of English

**Summary statement of principles.** Effective use of English is essential in establishing the right sort of classroom atmosphere. To use English effectively is to say precisely what one means.

[1] Related type-difficulties: *Section* III. D, H. *Section* IV. A, F. *Section* VI. A, B.

English which is correct, adapted to the pupil's comprehension, and sufficiently forceful is a large part of efficient class management. The art of skillful questioning is seldom acquired by teachers who have not first mastered the art of clear and emphatic speech. The difficulties arising from the pupil's careless use of English become much less serious if the teacher's use of English is a stimulus to the pupil's self-improvement. Teachers' lack of self-confidence and difficulties in maintaining the respect of a class are frequently due to careless use of English.

To detect errors in speech it is best to invite some other teacher to observe the classes and to make a record of mistakes in usage, manner of speaking, and other essentials. When no such competent critic can be found to do this, ask two or three intimate friends who are good critics of spoken English to call attention to errors made in conversation. Then record these errors in a notebook and practice the correct forms systematically until the errors are corrected.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (III. A)

**1. How to avoid excessive use of slang.**

Careless errors and use of slang occur when the teacher is talking too fast. Practice talking slowly enough so that the form of expression can receive attention as well as the thought.

**2. How to avoid booklike phrasing and a stilted manner of speech.**

Talking "from the book" can sometimes be avoided by directing your remarks to some one pupil in the class. This helps to overcome the feeling of distance and makes it easier to use natural terms which pupils readily grasp.

**3. How to correct faulty pronunciation and occasional bad grammar.**

Buy and use the Century Handbook or some similar manual as a guide for checking mistakes. Faulty pronunciation can be corrected by noting all words of which you are not sure. Then look up the correct pronunciations and practice them.

**4. How to determine and practice a proper rate of speech.**

The best rate of speaking to a given class can often be found by watching the class. If the pupils seem to know what you are going to say, talk faster. If they look bewildered, talk more slowly. It is well to test the normal rate of speaking by telling the class something at your usual rate of speech, and then giving them a simple test on the facts presented. Another similar talk may then be given at a different rate of speech and the facts tested again. The pupils' restlessness is a good indication both of too deliberate and too rapid rates of speech.

**5. How to correct slovenly articulation.**

Clear articulation is easy to practice by pitching the voice as low as possible and speaking so distinctly that all pupils can hear. Do not confine the practice to the classroom.

**6. How to develop a carrying voice, with effective modulation.**

To develop a "carrying voice," practice addressing the pupils in the rear seats in a conversational tone. Use extremes of pitch — loudness and quietness *both*, for emphasis. Note that the effect of sudden lowering of voice to a whisper is sometimes quite as emphatic as raising the voice to a shout.

## Type-Difficulty III. B [1]

### Learning Pupils' Names

**Summary statement of principles.** Some device should be planned and applied at the first meeting with a class towards learning pupils' names promptly. When pupils can be promptly named, the teacher is better able to hold attention. He is also better able to put pupils at their ease by establishing an informal and friendly atmosphere. Familiarity with pupils' names helps

[1] Related type-difficulties: *Section* IV. A, B. *Section* VI. C.

to increase the teacher's self-confidence. It also increases respect for the teacher's authority and for his command of the classroom situation.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (III. B)

**1. How to learn pupils' names most quickly and most easily.**

A simple method of locating names is to bring a package of $3 \times 5$ library cards to class, one side of which bears a red line at the top with other lines in blue. Each pupil receives a card and is instructed to write his name on the red line. Other data may be written on the blue lines below. When the class is seated in rows, they are instructed to pass the cards forward, each pupil placing his card on top of those received from the rear. The teacher collects the cards from the front desks of each row, writes a letter designating the row on the first card of each row, then arranges the cards for each row on the desk so that all names are visible with the back seats at the top of each row. The names are then read to check omissions and proper pronunciation of names. Where any seats are vacant, blank cards may be substituted. This provides a seating plan in about five minutes for use during the first period. The cards may then be numbered at leisure and a more permanent plan drawn up.

**2. How to assign seats so as to simplify learning names.**

To simplify the procedure described, pupils should be seated as near the front as possible or at regular intervals, say on alternate seats.

**3. How to take attendance most efficiently.**

Attendance may be taken by noting the row and number of vacant seats. With the chart on the desk, the teacher should call as many names as possible from memory the first day, referring to the chart only when necessary.

**4. How to return papers most efficiently.**

The papers should be arranged according to the seating chart, papers for each row in a separate bundle, and the top paper of each bundle representing the front seat in each row. The bundle for each row is then laid on the front desk. The pupil removes his paper from the top of the bundle and passes the others back.

## Type-Difficulty III. C[1]

### Beginning Work Promptly

**Summary statement of principles.** A strong " send off " does much to guarantee the success of any period. It makes the presentation of subject matter more vivid and helps to clarify assignments of work to be done. By meeting a sharp challenge at the outset, the class is more likely to coöperate and to attack either oral or written exercises more vigorously. The subject matter must be adapted to the class to the extent that its meaning and importance are as obvious as possible. In drill work a brief written test is an efficient means of opening the period.

The time required to get the class " down to business " depends upon the teacher's self-confidence and authority. It also depends upon the character and definiteness of the work presented. A concrete problem that defines the work of the period should be stated briefly and followed by specific directions. Difficult pupils, including chronic loafers and triflers, should receive first attention until they have the work underway. Necessary materials should be ready for use when the bell rings. A topical outline, study directions, or summary of previous work, when placed on the board before the period, helps to make clear the point of departure, hold attention, and secure a coöperative attitude.

#### specific difficulties and solutions reported (iii. c)

**1. How to get a class down to business without loss of time at the beginning of the period.**

Secure complete attention by a five-minute written test, by a brief reference to some current event of general interest, which bears upon the

[1] Related type-difficulties: *Section* I. C, D, G. *Section* II. G, H, N. *Section* III. D, E, F, G, K. *Section* IV. A, B. *Section* V. C, H. *Section* VI. A, B.

work; by calling for questions on difficult parts of the unit, or by the brief explanation of work to be done during the period. A brief exercise involving the major principles contained in the unit may sometimes be written on the board before the period. This exercise will secure the attention of most pupils. The others may be managed individually. When the point of the exercise has been grasped, this point may serve as the point of departure for the work as planned. Much the same effect can be secured by any concrete example or illustration that stimulates the thinking to be done during the remainder of the period. The attempt to start pupils to working promptly should never result in forcing the pace beyond the pupils' normal rate of thinking. Enough time should be allowed to make certain that all pupils begin with a clear understanding of what they are about. "Busy work" has no place in high-school teaching.

**2. How to make a class settle down after an amusing incident has occurred or after some outside disturbance.**

The above should apply equally well in helping a class to settle down after work has been interrupted. Some comment by the teacher which combines firmness with good humor is usually sufficient to close the incident. The more completely the teacher appears to enjoy the disturbance while it lasts, the more willing the class usually is to drop it at the teacher's suggestion.

**3. How to begin work promptly when attention is harder to hold as in the period right after lunch.**

By applying the suggestions contained in No. 1, and by selecting material interesting in itself which calls for some activity by all pupils. It may be necessary to postpone work requiring close concentration until the class has warmed up.

**4. How to introduce the work of the period so as to establish good humor in the classroom.**

No general suggestions can apply to this difficulty since it must be met in terms of the particular course and class. Friendliness should prevent formality and stiffness, but the means of introducing novelty and freshness in the work will depend on the teacher's resourcefulness.

## Type-Difficulty III. D[1]

### Questioning

**Summary statement of principles.** The mechanics of questioning have an important effect upon the class attitude. The method of placing questions not merely determines the response of the individual pupils addressed, but also the mental disposition of the class. Questioning is thus a significant factor in class management.

In introducing new work, a few short, clear questions, asked of pupils of average ability, help to direct attention to the real point of the work to follow. If the replies indicate that the pupils lack the necessary background for full comprehension of the work, the teacher may supply this preparatory material. The question must be phrased with reference to the person of whom it is asked. A wandering pupil is drawn into the work by a quick imperative question, "What is your trouble?" Any pupil is stimulated by a direct inquiry concerning his specific difficulties and will often indicate the needs of other pupils that require the teacher's attention.

In general group discussion of a common difficulty, questions should be asked as though the teacher did not know the answer; that is, in a deliberate and thought-provoking fashion with frequent pauses to encourage real thinking. Questioning for the purpose of review requires the same deliberation to bring out the application of past to new material, — "What did we find out about that when we first came across it? What does that have to do with the present discussion?" The question is useful in sifting material presented in oral reports and in emphasizing important ideas which the audience does not

[1] Related type-difficulties: *Section* I. B, C, D, I. *Section* II. B, E, F, G, K, O. *Section* III. A, E, I, K. *Section* IV. A, B, D. *Section* VI. B.

catch. The question thus serves to keep general discussion to the point.

The well-considered question is perhaps the most efficient means of directing individual work when the class is engaged in individual study.

The English employed in the teacher's questioning should be perfectly clear. Words should be so chosen as to encourage attention to good form in the answer, both as to definiteness and to force of expression. The teacher's manner of questioning should also encourage courtesy in pupils' questions and replies.

### SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (III. D)

**1. How to hold the pupils' attention by questioning them on text material with which all are familiar.**

It is futile to test pupils by oral questioning upon familiar materials. A brief written test may be necessary to determine that the material *is* familiar. Such questioning as then follows is useful only to emphasize useful relationships between the familiar material and new material.

**2. How to hold attention when one or two overzealous pupils seek to answer all the questions.**

The difficulty here apparently does not lie with the manner of questioning, but rather with the attempt to make the oral question do the work of a written test or exercise. Material should be so prepared that pupils may work on it independently when once the purpose of the work is made clear. The work should hold attention, though questions may catch and direct it.

**3. How to ask questions that hold the class when the material in unfamiliar to all but a few pupils.**

When material is unfamiliar to all but a few pupils, it should be presented and explained again with appropriate examples and demonstrations, then followed up by appropriate assignments. Since the class needs rather to understand the material than to organize it, group questioning is out of place.

**4. How to use an abrupt question as a means of checking disciplinary troubles.**

As a means of checking disorder, the question should single out the ringleader and require him to do some hard thinking on the subject of his work. Disorder is prevented by centering attention on the work. After a disturbance has been started, the effectiveness of the question will naturally depend upon the teacher's resourcefulness in adapting it to the particular circumstances. Sarcasm is often effective if it implies no bitterness. The tone should express authority and the point should be obvious to the entire class — *e.g.*, "Do you intend to keep that up until I tell you to stop?"

**5. How to use rapid-fire questions as a means of warming up a class.**

Rapid-fire questioning is a poor means of "warming up" a class. If by "warming up" is meant getting a class into a productive attitude, promiscuous questioning is quite as likely to defeat the purpose as to accomplish it. A more sensible procedure would be to introduce the work by a brief written exercise that requires all pupils to do some thinking upon the essential principles involved. When questioning is used to introduce a topic, the teacher should present questions which arouse curiosity and enthusiasm by suggesting new points of view, interesting problems to work out, and efficient methods of study to be applied to the work of the period.

## Type-Difficulty III. E [1]

### Directing Individual Work

**Summary statement of principles.** Individual work during the class must, of course, be provided before it can be directed. This work may consist in silent reading, organization of notes, writing of reports, working of exercises, correction of papers, conference work with other pupils, or other useful activities. It is assumed that the necessary materials are available and that pupils know how to use the materials as a means of understanding the unit more comprehensively.

[1] Related type-difficulties: *Section* I. C, D, E, I, J. *Section* II. E, G, H, J, K, L, N, O, P. *Section* III. D, F, G. *Section* IV. A, B, C. *Section* VI. B.

The work should be individually assigned — at least to the extent that pupils may work at individual rates of speed even if they are working to the same end. It is usually desirable that different work be assigned to different groups of pupils on the basis of their interests or deficiencies. Such assignments are simplified by the preparation of guide sheets that can be handed to those pupils who have difficulty in understanding the particular principles with which the assignment deals. When the work involves the acquirement of skills, drill exercises are essential as a means of giving pupils practice upon only those phases of work in which they need practice. Assignments should be made as the need arises and should be supervised to prevent the pupil from wandering from the point until he clearly understands the end to be reached.

The efficient direction of individual work requires a coöperative atmosphere in the classroom. Until pupils have learned to attend to their own business, it is difficult to work with any one group without causing some disturbance to others. However, when a point is being explained to one pupil which other pupils need to have explained, these pupils should be encouraged to follow the explanation.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (III. E)

**1. How to direct the work of different pupil groups when each group is engaged in different work during the period.**

Direction consists in definite assignments of work, explanation of the method to be followed, and such criticism and further direction as the pupils' progress requires. Pupils engaged in the same type of work should be grouped together whenever possible. The assignment and explanation of method can often be presented on guide sheets. Where guide sheets are self-explanatory, all groups can begin work as soon as the sheets are distributed. The danger in the use of guide sheets is that the pupil may follow the directions blindly. Where guide sheets are not used, the class should

receive oral or board directions which can be followed at once. The teacher may change or supplement the directions as the needs of each group or individual pupils require. Difficulties should be explained to individual pupils, and any others who wish to listen, whenever the difficulties are met.

### 2. How to give slow pupils all the instruction they need without loss to the fast pupils.

By general explanations of common difficulties and by individual explanations of individual difficulties. Attend to slow pupils first, prepare work at least for slow pupils in advance, with specific directions either on guide sheets or on the board, and encourage any pupil to listen to explanations given to other pupils whenever the explanation applies to his difficulties. The abler pupils should work independently when the purpose of the work has been made clear.

### 3. How to avoid loss of time while part of the class is putting work on the board.

By reducing board work to a minimum. A well-selected exercise placed on the board by the teacher before class can usually serve the purpose of several unselected exercises. If all pupils work at their seats there is less distraction. Pupils also pay closer attention whenever the teacher explains errors made by a significant number of pupils. Individual errors are best explained to the individual pupils concerned.

### 4. How to supervise experiments efficiently in laboratory sciences.

By preparing apparatus in advance, listing on the board the steps in the experiment assigned, and asking pupils to check off these steps as completed. Idleness is discouraged by requiring pupils to record time taken for each step and the difficulties met. The teacher can then explain the difficulties. Much indifference results when the directions of the laboratory manual are so explicit that the pupil is not challenged to think for himself. The pupil should be given responsibility for *finding things out* rather than merely for the mechanical performance of the experiment.

**5. How to give necessary explanations to a few pupils without disturbing other pupils.**

By teaching the class to listen to any audible explanation that applies to their needs and to disregard explanations which do not apply or which they already understand.

## Type-Difficulty III. F[1]

### Providing Materials

**Summary statement of principles.** Materials to be provided are of three main types, problem, exercise, or assignment sheets; reference and illustrative material; and pupils' notebooks and written papers. To prepare effective assignment sheets, the teacher must have a comprehensive knowledge of the subject matter and close acquaintance with the needs of the given class. Assignment sheets should usually supplement the text material by more specific problems than the text includes, since the problems may be chosen with reference to the needs of the given class. Supplementary material of this kind may be used for both oral and written exercises or assigned for classroom study when needed by individual pupils. Review work usually requires supplementary outline material to give perspective and to place emphasis. Guide sheets economize the direction of individual work. Pupils often show more interest in tests when each pupil has his own copy of the test form. The prepared test form should usually be filed in the classroom and kept there. Bulletin boards should carry all general announcements, unit assignments, interesting clippings, reading lists, and other items of value to the class.

Pupils' papers should be returned, handled, and collected according to some efficient routine. The teacher's efficiency in

[1] Related type-difficulties: *Section* I. B, C, D, F, J. *Section* II. G, H, K, O, P. *Section* III. E, J, K. *Section* IV. A. *Section* V. B.

passing and collecting papers makes for a coöperative attitude and offers one means of keeping overzealous pupils busy. The purpose of the teacher's system of providing materials should be to teach pupils to assume the responsibility for having proper materials on hand.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (III. F)

**1. How to handle pupils who fail to bring textbooks or notebooks to class.**

Where the textbook is essential to the work of the period, by supplying the pupil with a reserve desk copy and requesting him to bring his own copy in the future. Where failure to bring the text is habitual, by assigning individual work from another text and requiring the work of the period to be made up later. Notebooks should not be allowed to leave the classroom unless they are to be used for outside study. In the latter case, notebooks should be called in and briefly examined at frequent intervals.

**2. When and how may pupils be allowed to visit the library for reading materials so as to cause the least confusion?**

By providing the references in the classroom that are needed by a majority of the class. Individuals needing to consult other references may visit the library in such numbers as the facilities permit.

**3. How to anticipate the need for illustrative materials far enough in advance so that they will be on hand when needed.**

By planning the equipment needed for each period in advance — as in laboratory work. Appropriate illustrations — clippings, pictures, diagrams, and notes — may be filed in folders according to the units or topics of the course. Pupils may keep envelopes marked for each unit in a notebook. Questions concerning topics to be studied later and whatever illustrative material the pupils find which they consider interesting may be filed in the appropriate envelope for use when the unit is studied. Much useful material can be obtained on request from outside agencies, such as chambers of commerce, public libraries, and supply houses.

**4. How to supply pupils with supplementary material when no mimeograph is available.**

By purchasing or persuading the school to purchase a cheap hectograph ($10.00) or, as a last resort, making best use of the blackboard.

**5. Is it legitimate use of time to dictate material during the period when it cannot be copied and handed out?**

This depends entirely on the importance and amount of the material dictated. As a general rule, dictation should be avoided.

**6. How to prevent confusion from borrowing erasers when several pupils are working at the board.**

By purchasing or having purchased a sufficient supply of erasers. This nuisance is obviated by appointing certain pupils to be responsible for the supply and distribution of necessary materials. It is seldom necessary to send several pupils to the board at once. Seat work serves the same purpose.

**7. How to make collateral readings available during the class period.**

By building or borrowing a small bookcase for classroom use where the books and pamphlets may be kept that are needed in connection with the material being studied. Such references would ordinarily need to be changed for each unit.

## Type-Difficulty III. G[1]

### When to Make Assignments

**Summary statement of principles.** Both the nature of the assignment and the time of making it should be adapted to the present needs of the class. Each new unit of work should ordinarily be introduced by an assignment covering the unit as a whole – *e.g.*, a written report, a series of problems, a list of books to be read. Each period should normally commence

[1] Related type-difficulties: *Section* I. C, D, F, G, I. *Section* II. K. *Section* III. E, I. *Section* IV. A, B, C, G.

with a clear statement of the purpose of the work of the period. Where home work is required, it should be a continuation of work done in class, which the class presumably has learned how to attack. Home assignments may require collateral reading when the books are not available in the classroom, or may require the rules and principles studied in class to be applied to illustrative problems and examples. Such assignments should be made whenever and to whomever the teacher's supervision of individual work shows them to be appropriate.

Assignments should be made and revised whenever necessary to direct the work of individual pupils more effectively. Oral reports should usually be assigned whenever an appropriate topic presents itself, or whenever a pupil is found particularly qualified to discuss a topic of general interest that is pertinent to the work in hand. The time of making the assignment should be chosen with due regard to the pupils' readiness for it. This means that the class should be prepared for new assignments by appropriate introductions which receive undivided attention. The time and manner of making assignments should challenge the pupil's initiative sufficiently to secure a prompt and efficient performance. It is well to vary the time during the period to suit the conditions present. No fixed time, such as the beginning or close of the period, is the best time in all circumstances.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (III. G)

**1. How to tell the best time during the period to make the assignment when the material is comparatively unfamiliar to the class.**

By taking sufficient time to introduce, present, explain, and demonstrate the work for the class as a whole so that supplementary directions needed by individuals may be reduced to a minimum. Time should be allowed for pupils to begin work on the assignment so that the teacher may know whether

more explanation is needed. The assignment itself — whether project, unit problem, or class exercise — may, therefore, be presented at whatever time the class is ready to work on it intelligently.

**2. When should advance work be assigned during the period if certain pupils are habitually unprepared?**

The lack of preparation probably results from too great reliance on home-work. The situation demands the elimination of home work and the reorganization of class work more largely on the classroom study basis. Pupils should be "prepared" during the class period — not out of class — to undertake the new assignment.

**3. Is it well to let unprepared pupils spend the period on the work they should have brought to class?**

Yes, as a means of emphasizing the value of the work and of teaching efficient methods of study. Only pupils who are able to study efficiently should be allowed to study *out* of class.

**4. What considerations determine the best part of the period for making an assignment?**

The relation of the work in progress to the work to be assigned, the proportion of the pupils who are ready for the new work, and the time required to make the assignment effectively. This applies to assignments for the class as a whole. Individual assignments should be made whenever individual difficulties are discovered which special work will help the pupil to overcome.

## Type-Difficulty III. H[1]

### Improving Pupils' English

**Summary statement of principles.** Attention to pupils' use of English in oral recitations and exercises is necessary if only to secure clear comprehension and analysis of the points discussed. English should be regarded as the concern of all departments. Vocabulary study is important in any subject to teach the precise

[1] Related type-difficulties: *Section* II. C, G, I. *Section* III. A. *Section* IV. F.

terms required in making clear distinctions. Since the accuracy and quality of the teacher's English is inevitably reflected by the class, the teacher's English should, of course, be faultless. Ungrammatical, as well as inaccurate, speech and writing should receive as much attention as is given to any other phase of the subject matter. The teacher should exercise tact in calling attention to mistakes in speech so that the pupil is not confused in his thinking by the effort to avoid lapses in his English. When the thought has been expressed, the pupil may then improve the form of expression, not before.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (III. H)

**1. How to improve the pupils' use of English in the classroom.**

By repeatedly emphasizing the relation between clear expression and clear thinking, by attention to the teacher's English even to the extent of preparing talks before class, and by consultation with teachers of English for specific methods of teaching pupils to avoid particular errors. Detailed procedures for teaching pupils to overcome errors in oral and written English may be found by consulting books on the teaching of English. All teachers should provide for the recording of errors in English.

**2. How to train pupils to use a pronouncing dictionary for unfamiliar names, foreign words, and technical terms.**

By keeping a dictionary in the classroom and giving occasional exercises for practice in using it efficiently.

**3. How to enrich pupils' vocabularies as a step toward the elimination of slang.**

By refusing to accept statements expressed in slang unless the slang expression happens to be more effective in the given situation than the conventional equivalent, by systematic vocabulary study with appropriate exercises, and by requiring pupils to use accurate terms whenever the appropriate terms have been taught.

**4. To what extent should written work be penalized for poor English form in other than English courses?**

Merely to reduce pupils' marks for poor English form is not an effective remedy, particularly when no distinction is made between marks for form and for content. It is better to reject all papers until the English form is made acceptable. This applies to any course. Exercises in English courses which are intended primarily to teach certain forms of expression, will naturally be marked on this basis, but there is often need for formal exercises in other subjects as well. By "making a drive" on a few gross and frequent errors, these can readily be eliminated. Then other errors should be attacked in the same way.

**5. How to determine the emphasis to be placed on grammatical spoken English in other than English courses.**

By consultation with the English department and by collecting the most frequent errors of the given class. In general, it is ordinarily best not to interrupt a pupil to correct an error. The error should be noted and brought to his attention later.

## Type-Difficulty III. I[1]

### Oral and Written Reports

**Summary statement of principles.** Oral reports or prepared recitations help to adapt subject matter to the needs of the class. A well-made pupil report sometimes emphasizes the significance of the topic from a point of view which the teacher may not cover. Oral reports should always apply directly to the work in progress, should not be too frequent, should be followed by discussion, and should give full scope to pupils' initiative. Reports are sometimes useful for review and summary. Reports are more effective when the pupil reporting questions the class on the substance of his remarks and the class questions the

[1] Related type-difficulties: *Section* I. C, E. *Section* II. D, E, F, O. *Section* III, D, G, J, L. *Section* IV. A, B, C. *Section* V. A.

reporter. The questions should be supplemented by the teacher when necessary to give proper emphasis and to keep the pupils' critical comments to the point. Reports should be assigned whenever appropriate topics arise or when pupils are found who are particularly well qualified to report upon them. Pupils should take notes on oral reports and coöperate to the end of providing an attentive audience. Wisely directed, the oral report helps pupils to overcome timidity. Oral reports should be "marked" chiefly with reference to the value and interest of the report to the class audience.

Written reports should generally serve to organize ideas obtained from reading as applied to the main problem or principle of the unit. Such reports should be written in class and may constitute the work of several days, provided sufficient reference material is available.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (III. 1)

**1. How to administer oral reports and special assignments.**

By requiring pupils to submit abstracts or outlines of reports for criticism in advance, by stressing manner of presentation, by holding the reporter responsible for command of his subject as tested by questions asked by the class, and holding the class accountable to the reporter by allowing the reporter to question the class upon the substance of his remarks. Special assignments should be reported privately to the teacher during the class period and followed up by criticism and further direction as needed.

**2. How to prevent the mere copying of report material from the reference books.**

By calling for an abstract of the report in advance and requiring the pupil to show evidence of independent thinking before the report is approved. Insistence upon the use of original illustrations and applications to the pupil's own experience tends to remove this difficulty in oral reports. Written reports will not be copied if prepared in class from the pupil's own notes on his reading.

**3. How to prevent pupils from reading their reports in a bored tone of voice and with no effort to convey ideas to the class.**

Stop the report whenever the pupil reporting does not try or whenever he fails to hold his audience. Give the pupil whatever help he needs in collecting the effective illustrations by means of which he can hold his audience.

**4. How to encourage proper coöperation in preparation and discussion of reports on special topics.**

Assign responsibility for given topics to various groups in the class. Allow each group to collaborate in preparing material and to designate the pupils who are to present phases of the topic. Allow the pupils selected to report on different phases of a topic to divide up references among themselves, thus encouraging them to compare notes on the different references.

**5. How to make the rest of the class responsible for the information given by pupils who have prepared special assignments.**

By group tests on the material presented and by holding the class responsible for the questions asked by the pupil reporting, provided, of course, the questions have been covered by the report.

## Type-Difficulty III. J[1]

### Notebooks

**Summary statement of principles.** Pupils' notebooks are seldom justified when prepared merely to satisfy a requirement. They are most useful when used to record material which a pupil wishes to keep because of personal interest or because of its value in helping him to overcome difficulties in the work of the unit.

As a matter of classroom convenience, it is well to require pupils to file certain papers — assignments, outlines of work,

[1] Related type-difficulties: *Section* I. C, D, E, H, I. *Section* II. G, J, K, N, O, P. *Section* III. F, I, M. *Section* IV. A, C, E.

drill sheets, review summaries, and tests — in a stiff-covered folder for ready reference. To have such material available on demand helps pupils to relate the units of the course. It also helps them to benefit by previous mistakes, as indicated by the sequence of corrected exercises and class papers. This type of notebook may also be used to direct attention to deficiencies in written English. The chief benefit to be derived from the notebook consists in the material noted by the pupil as applying particularly to his individual needs, such as the record of material needed to supplement the text, a record of the teacher's suggestions following the supervision of the pupil's work, and questions which he wishes the teacher to answer.

In subjects related closely to pupils' out-of-school experience, — such as English, civics, and general science, — the notebook stimulates coöperation in collecting illustrative material. A series of envelopes, indexed with reference to the units of the course, can be used to file data relevant to the advance units which pupils are curious to have explained and which they come across by accident as the course proceeds. This use of the notebook tends to direct pupils' initiative toward the enrichment of the course and results in the collection of much useful material.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (III. J)

**1. How to help pupils make efficient use of notebooks.**

By explaining and demonstrating the purpose of the notebook until pupils are convinced of its value. If pupils are not so convinced after a few weeks' experience, the teacher may abandon the keeping of notebooks. Notebooks should be examined at the close of each unit. Suggestions concerning both form and content should be written in each notebook and supplemented by oral explanation to the class as a whole. Where the method of note-taking is important, such methods should be systematically and thoroughly taught. Class exercises and the work of the unit should require systematic use of material collected in the notebook.

**2. How best to use notebooks as a means of recording supplementary material and study helps.**

By giving a list of topics for which material may be collected; also by encouraging pupils to show initiative in collecting material related to other topics. Suggestions concerning methods of study should be noted by the pupil at the time they are given.

**3. How to use notebooks to collect material for class discussion from outside sources.**

As suggested in the last paragraph of the summary statement, or by assigning certain topics to be "covered" by certain individuals or groups, well in advance of the time when such material is needed. Pupils should be encouraged to record material from other courses which is relevant to the given course.

**4. How to use notebooks for recording individual and class assignments.**

By having the assignments filed in the notebook. Where assignments cover the entire unit, as presumably they should in content subjects, it is desirable for the assignment to be distributed on mimeographed sheets at the time the new unit is presented. The sheets may then be filed in order. Individual assignments should be written for the pupil's own information and record.

**5. How to induce pupil to keep notebooks up-to-date.**

By periodic examination of the notebook, followed by private conferences. Pupils should not be required to keep notebooks, if they are not frequently and systematically used. When the pupil has learned how to use the notes systematically, the need for their close examination by the teacher is slight. Voluntary and useful note-taking is the end desired.

**6. How to make pupils take notes neatly.**

By rejecting untidy notes — unless attention to form tends to defeat the purpose of the notebook, which is to provide a personal record of interesting and useful material. Loose-leaf notebooks are far more easily kept neat since the contents may be indexed and new material placed with other material of the same sort. Untidy sheets may be easily copied.

## Type-Difficulty III. K[1]

### Preparing and Conducting Tests

**Summary statement of principles.** An important purpose of testing is to evaluate the teacher's success in adapting assignments to the needs of the class and to the needs of special groups within the class. This purpose should govern the method of test preparation in that tests should require the pupil to apply his learning to life situations.

Tests should help to determine the needs of particular pupils or groups for special kinds of instruction. Tests should ordinarily interrelate the work of the unit by demanding such study before the test and such thinking during he test as will make for a useful perspective. In this sense the test serves the purpose of a review exercise. A test so designed as to stimulate initiative rather than mere retention of factual material tends to secure coöperation and to prevent dishonesty. The form of the test should provide for a sampling of pupils' abilities, thereby avoiding injustice to pupils whose abilities are uneven.

As a factor in class management, the test is an efficient substitute for oral questioning by the teacher upon material studied out of class. It gives direction and definiteness to oral and written class exercises when the points tested are the points of major importance. When pupils are tested frequently upon their ability to employ efficient methods of study — as in using indices, taking notes, selecting essentials in reading, finding pertinent references, understanding brief lectures, making useful outlines, and the like — the test is an incentive toward improvement in these activities.

For a test to serve any of these purposes it is necessary that

[1] Related type-difficulties: *Section* I. C, D, I. *Section* II. F, G, J, K, O. P *Section* IV. A, B, C, J. *Section* V. G. *Section* VI. F.

the form of the test be chosen with direct reference to the particular purpose. The teacher should accordingly become familiar with the various forms of test in common use, and with the different purposes for which each form of test is most useful. This information may be found in any standard treatment of the new type test and examination. While standardized tests are useful, they must be supplemented by tests of the teacher's own construction to cover the significant outcomes of teaching that the standardized tests do not cover.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (III. K)

**1. How to prepare tests.**

By recording deficiencies and difficulties of individual pupils in the work covered by the test, by listing the essential abilities to be developed by the work, by securing as many familiar life situations as possible to which the material studied can be applied, - and by constructing the test from these materials. Teachers not familiar with the particular merits of the various test forms in use, should consult the samples contained in standard books of reference. The efficient test requires the pupil to select and organize ideas rather than merely to recall them; hence, the test, insofar as possible, should require the pupil to apply his learning in the way in which he is expected to apply it in real life.

**2. How to vary the form of short bi-weekly tests to prevent monotony.**

By systematically employing different forms on each test until the cycle of five or six useful forms has been completed, then repeat.

**3. How to test mastery of assignments prepared out of class.**

By conducting five-minute tests after the completion of the assignment, or more frequently. Five minutes of group testing is usually sufficient where home work has been assigned. Testing may be less frequent when the work has been done in class. The teacher is then free to use the period for the direction of individual study which enables him to check the progress of individual pupils more efficiently than can be done by group testings.

**4. How to prepare tests which make the best use of time available for writing.**

By consulting manuals dealing with the construction of limited-response tests and constructing tests according to the samples and directions given.

**5. How to conduct an alternate-response test when no mimeograph is available.**

By placing the test on the board or by dictating it, asking pupils to number the questions as read and to write simply "Yes" or "No" after each number.

**6. How to prepare tests so as to prevent dishonesty.**

***a*. By unnecessary questions from pupils.**

By giving a trial exercise, *i.e.*, a sample test, and calling for questions on points not clear; by revising tests until ambiguities are eliminated so far as possible; by announcing that no questions will be permitted after the trial exercise. Pupils should be taught that whispering is equivalent to direct cheating.

***b*. By pupils' standing up " to see the board."**

By mimeographing the test where possible. Otherwise, by dictating the test and placing pupils in alternate seats.

**7. How to determine what form of test will be most useful in connection with the given material.**

By experiment. Construct tests of different types upon the same material. Compare the scores on each type of test with your estimate of the pupils' ability to apply the material intelligently.

**8. How much explanatory comment should the teacher give after the questions have been announced.**

None, if the test has been cleared of ambiguities and a trial exercise has been discussed. When many pupils have genuine questions to raise in connection with the subject matter of a test, it is often wise to abandon the idea of testing and employ the test as a teaching device. The test may be conducted later.

## Type-Difficulty III. L [1]

### Marking Papers and Oral Exercises

**Summary statement of principles.** Serious difficulties in every phase of teaching may result from the teacher's administration of pupils' marks and grades. The pupil's mental attitude expressed by the phrase "working for marks," is sufficient in itself to discourage the class coöperation without which effective teaching is impossible. The best means of preventing pupils from "working for marks" is therefore to give as few marks as possible, and to substitute other and more useful objectives.

Generally speaking, the legitimate purposes of marks are to distinguish clearly between satisfactory and unsatisfactory work, and by so doing, to direct the pupil's initiative toward self-improvement. It is therefore advisable to use only a few marks, never more than five, and preferably only three; "excellent," "satisfactory," and "unsatisfactory." Written class exercises, pupils' notebooks, and many other kinds of written work do not need to be marked since they are not prepared so much to show what the pupil can do as to serve as a means of learning. Such papers should be returned with comments suggesting improvements, but without any formal mark. The effect of this practice is to remove all motive for dishonesty and to emphasize the value of the exercise in itself. By the same principle, oral exercises should not be marked except where the oral performance is the end in itself — as in public speaking and foreign language. Oral reports, notebooks, and tests should usually be returned for revision when the English form is not satisfactory, rather than given a low mark.

When formal marks are reserved for tests covering a definite

[1] Related type-difficulties: *Section* II. F, G, H. *Section* III. H, J, M. *Section* IV. A, C, E, F, G, J. *Section* V. G. *Section* VI. F.

unit of work, they are more significant as measures of the pupil's progress. They also cause the teacher far less labor in bookkeeping. Since the marks are clearly distinct, when a scale no larger than five-point scale is used, the teacher can more readily justify any mark. Pupils whose abilities are uneven, but whose work as a whole is satisfactory, can thus be shown their deficiencies in private conferences or by the corrections indicated on the papers returned. It is difficult for a teacher to cultivate a sense of justice when obliged to mark pupils on a percentile scale. A record of the pupil's learning as inferred from his performance and written in plain English, is more just and more useful to both pupil and teacher. By the same principle lateness in submitting work and evidence of dishonesty should be penalized rather by rejection of the paper or other direct action, than by low marks.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (III. L)

**1. For what sort of oral recitation, if any, may marks be fairly given?**

Records should be kept of any significant indication of pupil progress. Formal marks for oral work should be confined to prepared talks, such as assigned oral reports or summary recitations. It is preferable to assign no formal marks, but to rate the pupil on a number of different items similar to the criteria used in judging debates. A class vote is often more significant than the teacher's mark.

**2. What standards should apply to the marking of an unprepared pupil who recites well impromptu?**

Such recitations should be recorded but not "marked" in the formal sense of "credit for the course." Impromptu recitations are not likely to be useful except where the purpose is to give the pupil practice in speaking extemporaneously.

### 3. How to avoid favoritism in marking.

By employing objective standards as far as obtainable, by asking other teachers to confirm your judgment in the case of pupils for whom you have particular liking or dislike, by making standards so definite that pupils can decide for themselves when papers are unsatisfactory.

### 4. How to mark papers on a five-point scale. (Should set standards be used or should marks be relative?)

By dividing papers according to merit in five piles. Standards should be used to determine the proportion of papers which do not indicate satisfactory command of the material.

### 5. How to establish a uniform system of marking in a course taught by three teachers.

By frequent conferences after each teacher has marked the same set of papers and by *some* conformity to a normal distribution curve - *i.e.*, by agreement to assign the different marks to certain percentages of papers. The evils of this practice in a small class often outweigh the advantages.

### 6. How to set standards for individual assignments, book reports, original themes, and other unstandardized work.

By distributing carefully prepared models or samples together with clear statements of the specific qualities or features which the work must show to prove acceptable.

### 7. Should all papers be marked and should all marks be recorded?

All papers should be carefully read with reference to the point which they are intended to teach. Not all papers need be "marked," though each paper should bear some indication of its quality. Pupils should be taught to locate specific defects. Presumably, all marks assigned should be recorded.

### 8. How to score and mark an alternate-response test.

Most efficiently, by having the test mimeographed on sheets of uniform size. By cutting out small squares on one such sheet, the sheet may be used as a stencil to facilitate scoring. When the stencil sheet is placed over a

test sheet, the correct checks on the test form can be read through the holes in the stencil. For methods of translating scores on an alternate-response test into school marks, see the detailed instructions in books of reference. Marks should differ from scores by taking qualitative differences into account.

**9. Should marks on the content of a paper be lowered for absence, lateness, or illegibility?**

No. Papers deficient in these respects should be returned for revision and rewriting, the pupil being held responsible for the location of unsatisfactory features. When the paper offers a convenient means of teaching him how to avoid similar mistakes in future, the errors may be indicated and specific directions supplied.

**10. In marking English themes should all mistakes be considered or only the mistakes which involve the principle that the theme was intended to give practice in applying?**

The procedure depends largely upon the maturity of the class. To penalize for all mistakes in each paper is likely to discourage pupils who respond best when allowed to concentrate on one thing at a time. It is accordingly best to consider only the principles directly involved in the exercise, provided a certain standard is reached in other essential features. Standards applying to these essential features should be made familiar to all pupils. As already suggested, it is best not to "mark" such exercises as English themes.

**11. In marking oral exercises, such as short speeches, should account be taken of the fact that the last speakers have the chance to benefit by the criticisms of preceding speakers?**

Yes. All such facts should be considered for the sake of common justice. If the purpose of the exercise is to teach rather than test, it should not be marked. The extent to which those speaking later have the advantage, would naturally depend upon the given situation, nature of the criticism, difference in topics, and other considerations. If only specially prepared exercises of this kind are marked as tests, it should be possible to postpone the criticism until all pupils have spoken.

**12. How to make clear to a class just what elements in the paper will have most effect upon the mark.**

By the procedure indicated in No. 6.

**13. How to mark laboratory exercises in general science classes where comprehension of the principle is desired rather than skill in experimental technique.**

Include as one feature of the laboratory exercise the direction to list reasons to explain the results of each experiment. These reasons should show comprehension of the principle sufficiently to serve as a basis for marking.

**14. How much attention should be given to each of several elements when all enter in to any written work as in foreign language classes; namely, syntax, punctuation, idiom, knowledge of forms, grammatical rules, and the like?**

By the procedure indicated in No. 10. The amount of attention given to any one element must depend upon its difficulty and importance in the given assignment.

## Type-Difficulty III. M[1]

### Correcting Papers

**Summary statement of principles.** The correction of written work — whether consisting of the pupils' own ideas, formal exercises, drill work, notebooks, or tests — should be guided always by consideration of individual needs. Coöperation and initiative are best developed in most pupils by holding them responsible for the detection and correction of their own errors. In such cases, the procedure is simply to return the paper as unsatisfactory and require it to be rewritten. Where errors of many different kinds appear, it is sometimes best to require only one type of error to be corrected at a time. This procedure is effective

[1] Related type-difficulties: *Section* I. C, I. *Section* II. H, I, N, P. *Section* III. J, K. *Section* IV. A, B, C, E. *Section* V. E, G.

in improving English form. For those pupils who cannot find all their serious mistakes, it is better to go over the paper in conference for the purpose of teaching the pupil a method whereby he *can* find his mistakes. Errors which the pupil cannot locate may occasionally be indicated, provided that the pupil is not overwhelmed by the number and variety of corrections. The effect of all comments on papers should accordingly be stated in the form of positive directions rather than mere indications of error. Dull but conscientious pupils and pupils whose abilities are uneven particularly require specific directions toward the improvement of papers returned.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (III. M)

**1. Should *all* mistakes be *indicated* by the teacher in written papers and reports?**

It is particularly important that pupils be taught to find and correct their own mistakes in all written work, hence, errors should seldom be indicated until the pupil has revised the paper at least once. When errors are indicated, only a few types of error should be checked until the pupil has learned to eliminate them. Then check others. This practice gives the pupil better opportunity to overcome each type of error.

**2. Should *all* mistakes be *corrected* by the teacher in written reports?**

No. 1 applies. It is usually easier for the pupil to correct mistakes than to find them. No teacher has time to make each paper perfect, which the correction of all mistakes would involve.

**3. When should the teacher actually correct the mistake himself, and when should the pupil correct it?**

This has been discussed. The pupil should make the correction, and also locate the error, whenever possible. It is usually more important that the pupil be taught to locate errors than that he be taught to correct them. Either ability is of small value without the other.

**4. Should comments on the pupils' papers be indicated by symbols or written in longhand?**

Longhand comments are more effective, particularly when written in the positive imperative form; — for example, the single word "clarify" is more effective than "not clear" or "this needs to be clarified." Where certain comments are very frequently made and call for the writing of one or two long sentences, the use of rubber stamps is a timesaver. When the symbols are chosen to apply to the more frequent errors of the particular class, a list of errors helps to suggest both the errors to be avoided and the errors to be detected when the papers are returned for correction.

**5. Should pupils be expected to correct the errors indicated on all papers submitted? If not, what proportion should be corrected?**

Yes. There is no value in indicating errors if they are not corrected.

**6. How may the teacher reduce unnecessary clerical work to a minimum?**

By efficient management. Written exercises should usually bring the results of study to a focus upon one or two specific points. If the class clearly understands the requirement and the standards that apply, the greater proportion of written work which is used as a teaching device should be corrected by pupils in class. Thirty tests of the limited-response type may be scored by stencils, recorded, and arranged for distribution to the class in about half an hour. Other kinds of clerical work may be simplified by the use of appropriate forms and by allowing pupils to help with paper work whenever they can do so to their advantage.

## SECTION IV

## DIFFICULTIES IN SECURING THE COÖPERATION OF THE CLASS

### Summary Comment Concerning the Type-Difficulties of This Section

*Secure the coöperation of a class by relating the work as directly as possible to problems or activities in which pupils are interested. Determine such interests by collecting significant facts about the class as a whole and by making special study of the least coöperative pupils. Establish cordial relations with influential pupils at the outset. Take pains to justify all assignments and class regulations by explaining their purpose convincingly. Disciplinary measures defeat the purpose, though firmness is an important factor in securing pupils' respect.*

The type-difficulties of this section also involve routines of class management to some extent since efficient class management has much to do with the pupils' attitude. While the difficulties may occur in any high-school class they represent different levels of teaching ability. The skillful teacher accomplishes by motivation what the unskillful teacher attempts to secure by disciplinary tactics. Hence disorder and dishonesty are often critical difficulties for beginning teachers. The seriousness of these difficulties in any class depends upon the teacher's force of character, skill in avoiding situations likely to antagonize

the class, and upon his ability to set up valid and practicable objectives that appeal to the class as worth while.

Other difficulties like holding attention, increasing carefulness in written work and speech, securing assigned work when due, and reducing unnecessary absences, are frequently caused by the traditions of the given community and school. Ability to secure and hold attention at will is seldom developed except by experience in adapting both the material presented and the rate of presentation to the pupils' response during the presentation. Pupils' attention to written work, oral speech, punctuality in handing in assigned work, and unnecessary absence — is best secured by concentrating on each of these difficulties, one at a time, with the individual pupils concerned. A definite statement of what is expected of the individual pupil will often produce a response which group directions fail to produce.

The remaining difficulties of this group, establishing a coöperative atmosphere, developing pupils' initiative, and making pupils courteous, are met by every teacher to some extent. Success in meeting these difficulties is therefore relative, and should be measured by the permanence of the pupils' response. It is one thing to develop coöperation, initiative, and courtesy for the duration of one course. It is vastly more difficult to teach these traits so effectively that they are expressed in the pupils' general conduct during and after the completion of the course. The positive teaching of coöperation presupposes the selection of subject matter that pupils feel to be highly useful, an organization of this material that permits each pupil to work through it independently, a general teaching procedure that encourages each pupil to adapt the material to his own uses when these are intelligent, and the specific attention to classroom behavior that makes for natural courtesy.

## Type-Difficulty IV. A[1]

### Establishing a Coöperative Attitude

**Summary statement of principles.** Pupils' willingness to coöperate is secured primarily by adapting instruction to the needs of the class. This means that each assignment of work shall be so clearly presented as to enable each pupil to undertake it with real understanding of its purpose and value. Questions to check the pupils' understanding should be followed by such further explanation as the individual pupil requires. A common purpose in the work should make for coöperation in keeping discussion to the point. Oral reports and exercises should be motivated by the natural desire to tell others what they should like to know, rather than by any formal requirement. Supervision of study should be directed at the specific difficulties that pupils encounter and the amount of help given should never exceed the point at which the individual pupil is challenged to overcome his own difficulties. Mimeographed outlines and guide sheets help to clarify the pupils' objectives and methods of attaining them and hence stimulate coöperation. Necessary review work should be so approached as to avoid the boredom often caused by repetition of material that is entirely familiar to the more capable pupils.

The teacher's efficiency in planning and delegating the mechanical duties of class management to pupils whenever possible, does much to encourage coöperation. Initiative and courtesy are essential elements of the pupils' coöperative attitude and also prevent disorder and dishonesty. Timidity and clownishness are frequent obstacles. The teacher's interest in the individual

[1] Related type-difficulties: *Section* I. C, D, J. *Section* II. B, E, F, G, K, N, O. *Section* III. D, E, F, I, M. *Section* IV. B, C, D, I, J. *Section* V. A, H. *Section* VI. A, B, C, E.

pupil tends to encourage initiative and courtesy. Authority wisely exercised tends to eliminate clownishness.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (IV. A)

**1. How to make each pupil in a class coöperate.**

By locating a common interest related to the given unit of work, presenting the work in terms of that interest, and demonstrating the value of the work in terms of different life situations until the value is recognized by each pupil. Individual coöperation is secured by showing the pupil that he may count on the teacher's help whenever he has made his best effort to help himself.

**2. How to win the respect of a class.**

By establishing a personal friendly relation with each pupil, showing strict impartiality, insisting on honest and efficient work from each pupil, and being direct and efficient yourself. It is well to share responsibility for class management with the class as far as possible. Avoid the common mistake of treating pupils as adults when presenting subject matter, and as children in matters of discipline.

**3. How to draw pupils of all grades of ability into a general discussion.**

By avoiding general discussions except when matters of general interest develop, then asking the more reticent pupils to comment upon the topic in the light of their personal experience. The more definitely each pupil is prepared to discuss some phase of the topic, the more general the discussion may be.

**4. How to make the indifferent pupil coöperate in a class exercise or in laboratory work.**

By removing his indifference. Study him to find his lines of least resistance and "talking points," show him in private conference how these relate to the exercise, adapt the exercise to applications within his familiar experience, and suggest new approaches or experimental work to arouse curiosity. Efficient arrangement of materials makes for coöperation.

**5. How to make general class discussions lively.**

By working up some form of competitive exercise, clash of opinion, or comparison of familiar personal experiences. An effective mechanical procedure is to present a list of different interpretations of a given problem and ask the class to check the satisfactory interpretations. When these checkings are compared, pupils are usually eager to defend and justify their own decisions. The "lively" class, however, is by no means an indication that useful learning is taking place.

**6. How to direct " socialized recitations " effectively.**

By avoiding any attempt to "put on socialized recitations" as such, except where practice in group conversation is justified for its own sake or by the nature of the project. If "socialized recitations" are confined to appropriate occasions, they should require no systematic direction by the teacher in high-school grades. If the interest of capable but indifferent pupils can be aroused by having them help other pupils, their coöperation is assured. In general, the " socialized recitation " may well be confined to such matters of general interest as the election of home-room representatives and other officers, discussion of class projects, comparison of views regarding matters of school policy, and the like.

**7. How to deal with the few over-zealous members of a class.**

By directing their excessive zeal to the accomplishment of individual work and requiring them to finish what they undertake. Coöperation is encouraged by assigning monitorial duties to such pupils. Call for *other* volunteers in general class discussion. Extra work is a safe remedy.

**8. How to eliminate giggling without making the classroom a jail.**

By suppressing the giggling in an entirely friendly manner. Furtive giggling is most difficult to check. It is therefore important to have the joke "explained." This usually checks the epidemic.

**9. How to maintain familiarity with pupils without loss of dignity.**

By treating pupils as equals in private conversation but maintaining reserve in class. By refraining from references to other pupils or to yourself which savor of personal confidences.

**10. How to praise a pupil who has done commendable work without subjecting him to the ridicule of classmates.**

By demonstrating the necessity for commendable work until all pupils have ceased to consider it ridiculous. Where the ridicule is directed at the pupil rather than the work, it is best to avoid praising him in public. Such praise should be moderate under any conditions.

**11. How much freedom from disciplinary regulations may be permitted a senior class?**

As much freedom as can safely be delegated to the least responsible member of the given class. When such a class can be led to draw up its own code of regulations, the coöperation of each member is a matter of concern and responsibility for the class as a whole.

## Type-Difficulty IV. B[1]

### Holding Attention

**Summary statement of principles.** To secure pupil coöperation is, of course, to hold attention; hence, the foregoing comment applies here without much modification. The degree of attention secured and the length of time it is held depend primarily upon the use of concrete example and illustrations from the pupils' familiar experience. Pupils who already understand a point which is being re-explained to a minority of the class should not be expected to attend to the explanation, but should be allowed to proceed with other work. Attention is aroused and directed by questions which are clear, thought-provoking, and varied in type. Variety is also a remedy for flagging attention in classroom study, oral reports, formal exercise of the drill type, review work, and other activities that easily become monotonous. But coherence should not be sacrificed to variety. Testing should compel close attention by the challenge which the well-

[1] Related type-difficulties: *Section* I. C, G, I, J. *Section* II. B, F, G, K, N, O. *Section* III. B, D, E, L. *Section* IV. A. *Section* V. C, D, H. *Section* VI. C, G, H.

constructed test presents to the pupils' common sense and ambition to succeed. Ability to call pupils by name in directing individual work by means of questions, is an effective check upon inattention.

The teacher's comments on papers returned have much to do with the pupils' attention to the items in need of correction. Chronic idlers, as well as clowns and humorists, require individual instruction in the performance of definite classroom routines — such as how to pay attention, and how to complete work on schedule. Friendliness and informality tend to establish a natural attention to work when the work is well presented and appropriate. Undue formality produces an artificial attention to the procedure rather than to the work itself. Excessive informality encourages indifference and disorder. Hence, a sense of humor and success in sharing interest in the subject are teaching traits that make close attention habitual.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (IV. B)

**1. How may the teacher decide when to attend to matters of discipline and when to problems of instruction?**

Indirect methods of discipline are usually less personal and therefore more effective than direct methods. Many problems of group discipline originate in problems of instruction. Disorder should be anticipated and prevented in planning instruction whenever possible. When disorder occurs it demands immediate and direct attention, regardless of the classwork in progress. Hence, mild disorder demands attention to instruction; flagrant disorder, to discipline.

**2. How to prevent pupils from asking apparently useless questions and from inattention when such questions are answered.**

By presenting the work so clearly that pupils know how to proceed, then answering important individual questions privately. The situation, as de-

scribed, obviously requires more opportunity for classroom study and less questioning. Useless questions should, of course, be ignored when the pupil knows they are useless. Irrelevant questions should be analyzed to show the pupil that they are irrelevant.

**3. How to prevent a class from day-dreaming while one pupil is reciting.**

By conducting recitations so infrequently that they have the interest of novelty. Permit pupils to "recite" only when they have something of interest to present to the class which the class cannot obtain as well from reading or other sources.

**4. How to present an explanation with sufficient emphasis to hold general attention and thereby to prevent numerous questions when the explanation is applied to the solution of a problem.**

By introducing the problem immediately after a brief explanation of the first steps, then working it out with the class and explaining successive difficulties as they are met. Other problems should then be assigned to which each pupil applies the procedure explained. General attention is held by abundance of striking illustrations.

**5. How to combat the inertia prevalent just before and just after a holiday.**

By special preparation of tests, novel exercises, or programs. By reserving special group work, such as debates or floor talks, for these days. Any procedure is effective in which each pupil is impelled to take some active part.

**6. How to enliven a class on the last period of the day.**

By introducing some appropriate form of competition or special assignments for the first few days until the class has formed a favorable attitude toward the course. Then conduct exercises to give practice in following the teacher's explanation, summarizing readings, and other routine activities. There is no reason why the last period in high-school classes should require a different procedure from other periods. The "end-spurt" should compensate for fatigue.

**7. What are the standard remedies for fitful attention on the part of a freshman class?**

Study the class, locate the pupils whose attention is most fitful, plan ways of stimulating each of these pupils individually, make class work consist largely of concrete situations, present assignments with extreme clearness, and meet individual difficulties with appropriate individual instruction. The cause of most fitful attention is physical restlessness. Hence, any class procedure which involves movement is helpful. Mental restlessness is best checked by group exercises in which each pupil has a definite part to play, as in well-constructed written and oral exercises.

## Type-Difficulty IV. C[1]

### Developing Pupils' Initiative

**Summary statement of principles.** To encourage pupils' initiative at the first meeting of a course the teacher should specify ways in which initiative can be expressed. This involves relating the course directly to pupils' experience by proposing optional assignments of work, by allowing choice of collateral reading, by inviting original illustration and examples of principles discussed, by indicating ways of expressing individual interests in terms of the course, and by extreme clearness in presenting the objectives of each unit. In directing all learning activities, the teacher should encourage initiative toward finding efficient means of attaining the objectives set up. After the objectives are attained and the pupil has a satisfactory command of the material prescribed, initiative may be directed toward other related objectives of the pupils' own choosing. Direct suggestions to the individual pupil during supervision of study in class are far more effective then suggestions to the group.

[1] Related type-difficulties: *Section* I. B, C, D, F, G, I, J. *Section* II. F, G, K, P. *Section* III. E, G, I, J, K, M. *Section* IV. A. *Section* V. A, C. *Section* VI. E, H.

Initiative should never be confused with mere lack of conformity to the teachers' program of work. Initiative results from intelligent conformity; it does not result from waywardness. In directing individual work, point out difficulties rather than methods of solving them, and place a high premium upon the ability to work out independent solutions for the difficulties. Pupils should be tested by daily observations in preference to "final examinations for credit," which generally tend to stifle initiative. Pupils should find their own mistakes in papers returned as unsatisfactory. Timid and lazy pupils should be given some simple directions toward overcoming their timidity and laziness, and should be shown specific ways of expressing self-confidence and initiative. Lazy pupils require simple tasks well within their abilities and insistence upon nothing less than a finished performance. The tendency to shirk responsibility should be met by insistence upon the completion of more work upon the given material. Initiative is stimulated by the teacher's interest in pupils' personalities and by the teacher's ability to share his own personal interests in the subject.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (IV. C)

**1. How to stimulate pupils to connect class work with their out-of-class experience voluntarily.**

By persistent use of familiar experiences for illustration; by raising questions for investigation out of class; by coöperation with teachers of other subjects to the end of relating the class work to suggestive problems in the other subjects. Moderate praise of all original work is effective when the pupil himself is able to show its application to the class work. It is also well to make certain pupils responsible for illustrations of topics assigned for the entire unit.

**2. How to increase the originality of pupils' written reports.**

By directing pupils to write only upon topics or experiences about which they have something to say, by encouraging the selection of small topics

rather than large ones, and by stressing sincerity and naturalness as essential qualities in writing. Formal and lifeless reports should be returned for addition of illustrative material.

**3. How to develop pupils' initiative in suggesting class plays and other activities for school organizations.**

By placing pupil officers under responsibility to the pupil group and leading the group to know what particular results they have a right to expect from the officers. "English," "science," "civic," and "math" clubs often encourage initiative not displayed in class work.

**4. How to make pupils independent of political bias in discussing social and political issues.**

By introducing the same issues in terms of some neutral situation where the relative importance of the principles involved can be discussed impartially. When conclusions are reached, they may then be referred to the actual situation.

**5. How to develop pupils' initiative in finding references for individual reports.**

By repeated emphasis of the fact that skill in locating useful references is more to be desired than references for any given report; by having pupils explain their methods of finding references; by listing the methods reported and by challenging pupils to add new and better methods.

**6. How to develop pupils' initiative in calling attention to difficulties in the assignment and other work of the course.**

By holding pupils responsible for results and pointing out the necessity of locating difficulties specifically before the difficulties can be intelligently overcome. Pupils should be given to understand that the purpose of class instruction is to remove difficulties which the pupil cannot remove himself. Consequently the pupil who "has no difficulties" prevents the teacher from helping him.

**7. How to develop initiative in selecting essentials from non-essentials.**

By constructing exercises for this particular purpose in the form of a list of items, some important and some unimportant, from which each pupil makes his selection. The selections are then compared and discussed.

## Type-Difficulty IV. D [1]

## Making Pupils Courteous

**Summary statement of principles.** Courtesy in classroom behavior is best taught by force of example. In asking questions, for example, a teacher should avoid the blunt, half-provoking question that imputes inferiority to the pupil addressed. Natural courtesy is far more contagious than formal politeness which lacks the friendly element. Discourteous pupils should be dealt with privately. Such pupils need instruction in how to be courteous rather than reprimands which imply that the discourtesy is deliberate. The instruction should consist in making clear the activities by which courtesy is shown in the classroom and which can be practiced to develop courtesy.

Disorderly pupils should receive the same kind of treatment. Overzealous pupils and pupils inclined to be clownish can be made responsible for definite routine activities, such as distributing materials, arranging equipment, and other duties, which involve contacts with other pupils. Courtesy may then be taught in connection with these activities, thus avoiding the antagonism that results from repressing pupils who seek to be conspicuous. Pupils whose apparent lack of courtesy results from personal peculiarities — extreme awkwardness, nervousness, and the like — often unconsciously seek to conceal their fear of ridicule by more or less ill-mannered swagger. To show

[1] Related type-difficulties: *Section* I. G. *Section* III. D. *Section* IV. A, I. *Section* V. B, H, K. *Section* VI. B, C, D.

such pupils an easier and more successful way to win the respect of the class is often enough to change their attitude completely. In general, pupils are taught courtesy by the right combination of friendliness and authority, as expressed in all the teacher's contacts with the class and with individuals.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (IV. D)

**1. How to discourage contradictions.**

By teaching the class that "cocksureness" and flat contradictions tend to lose the confidence of an audience, and that the appearance of impartiality tends to win confidence. Interruptions and contradictions may thereafter be discouraged by a mild rebuke or reminder.

**2. How to champion a conscientious and intelligent but unpopular pupil whom other pupils seek to antagonize.**

By trying to locate the cause of the unpopularity, then privately discussing ways of removing it both with the pupil himself and with his chief antagonizers.

**3. How to discourage the pupils' practice of flocking around the teacher's desk to examine the record book while he is consulting it.**

By posting the information they wish and by teaching the point of etiquette that personal papers are never read by others except at the owner's request. Instruction in such matters is effective if based upon well-chosen examples and if entirely impersonal in its application. The teacher who expresses undue irritation over such practices is likely to encourage their repetition as a form of teacher-baiting.

**4. How to teach the class to respect a pupil who has the floor. (The class "hero" repeats the pupil's remarks and adds a touch of humor to each.)**

By teaching the vulgarity of heckling and enough parliamentary practice to explain the privileges of one who has the floor; also by leading the humor in other and less offensive directions. Aside from the discourtesy involved,

it is always important to consider whether what the ridiculed pupil says is really worth respectful attention. The ridicule is often deserved.

**5. Should pupils rise to recite?**

Not unless what they have to say calls for a somewhat formal and organized presentation. Mere comments of a conversational sort are more naturally made without rising. When the rising is necessary to relieve physical restlessness, a short setting-up drill is more effective.

**6. Should new pupils in the ninth grade be addressed by their first names or as Mr. and Miss?**

The school convention and the teacher's preference should decide. Last names for boys and first names for girls offer a safe compromise under ordinary circumstances.

**7. How to handle pupils who seem able to read stories and to follow the discussion at the same time.**

By stopping the discussion, which apparently has little meaning or interest, and supervising the study of material that requires their full attention.

**8. How to avoid a spirit of antagonism in class criticism of certain pupils' work.**

By private conference with the critics in which they are shown that intelligent criticism is based upon objective evidence rather than personal whims or prejudices. The critics should also have the principles of courtesy explained in terms of their own behavior.

**9. How to discourage sullen and undertone protests after a pupil has been mildly reproved.**

By changing the manner or the time of reproof; by indicating displeasure without voicing it in public; by following up such incidents until the pupil acquires a more teachable spirit.

**10. How to train pupils to enter and leave the room with some decorum.**

By private and friendly remonstrance with those who make the disturbance. If this is not successful, by detaining the disorderly pupils until others have left the room.

**11. How to prevent interruptions while a pupil to whom a question has been addressed is thinking it over.**

By asking questions privately when only one pupil is concerned, by having the answers written when all pupils are concerned, and by asking others to keep silent when one pupil is addressed for the benefit of several pupils or of the class as a whole.

**12. How to deal with the many crudities of behavior on the part of pupils with fewer home advantages.**

By devoting whatever time is available to private coaching in social behavior. Specific suggestions are promptly adopted if the pupil respects the teacher and wishes to learn; otherwise the teacher can do little to help.

**13. How to encourage closer attention to conventions among girls without teaching insincerity of behavior.**

By giving instruction in the properties as suggested, and pointing out specific occasions in which a certain kind of behavior should be practiced. Also by emphasizing the extent to which unconventional behavior leads to criticism and prejudice. The emphasis here consists in the discussion of specific cases from an impersonal point of view.

## Type-Difficulty IV. E[1]

### Developing Carefulness in Written Work

**Summary statement of principles.** Like other difficulties in the mechanics of class management, pupils' carelessness in written work depends upon the extent to which they feel the work to be important. It is therefore essential that pupils be taught how to find something worth writing before they are asked to write it. The teacher's supervision of the pupil's writing in class should result in a mutual agreement concerning the particular matters of form to which the pupils will give most attention until these matters are made right.

[1] Related type-difficulties: *Section* I. C, I, J. *Section* II. H, I, K, N. *Section* III, H, J, K, L, M. *Section* IV. A.

The importance of the principles and problems studied should be made unmistakably clear and convincing by means of concrete illustration. Written exercises should seldom be assigned until the purpose and values of the particular exercise have been explained in terms of the purpose of the unit or course. Written English improves most rapidly when the writer tries to impress the reader with his sincerity and to make his meanings clear. Notebooks, test papers, or papers of any kind which do not show an honest attempt to express real meanings, should be automatically rejected. Insistence upon sincerity in all written work tends to develop a group attitude which is the best cure for careless writing. Challenge pupils habitually to defend the truthfulness of written statements. Carelessness in matters of form usually results from the pupils' inability to meet several requirements at once. It is therefore wise to specify one or two important points on which the given pupil may concentrate.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (IV. E)

**1. How to make pupils more careful in written work.**

By stressing the importance of content and the necessity of correct form as a means of presenting ideas forcefully. By rejecting papers which do not represent an effort to express ideas as accurately as possible. It is necessary, of course, to supply models which make perfectly clear the form in which written work should be presented.

**2. How to appeal to bright pupils who refuse to hand in neat papers.**

By refusing to take work seriously which the writers themselves do not take seriously. Require the papers to be recopied until they are consistently neat.

**3. How to combat the sentiment among boys that slovenliness is a manly virtue.**

By personal example and by illustrations to show the relationship between good-sportsmanship and attention to detail; between cowardice and sloven-

liness; between self-respect, clear thinking, and clean writing. Appreciation of neatness is, however, of little use until neatness becomes a habit.

**4. How to induce pupils to spend sufficient time in organizing written work in history and science to make the contents coherent.**

By reading a coherent and an incoherent paper on the same topic, then testing the class to show how much more readily the content of the coherent paper can be followed. By rejecting incoherent papers until the structure has been made satisfactory by outlining.

**5. How to teach respect for correct spelling, if only to the extent of recognizing misspelled words as such.**

By accepting misspelled words when marked "not sure" by the writer as equivalent to words spelled correctly, and by employing the many efficient devices to be found in recent literature concerning the teaching of spelling.

**6. How to make first-year pupils appreciate the significance of signs (*e.g.* decimal points, and parentheses in algebra).**

By demonstrating the inevitable relation between attention to such signs and correct results; also between neatness and accuracy in all computations.

**7. How to teach appreciation of clear and forceful writing as such.**

By rejecting papers not sufficiently clear until either the expression has been clarified or until ideas not clear in the writer's mind have been eliminated in favor of ideas that are clear; by comparing the effects of forceful papers with weak papers upon the class audience.

## Type-Difficulty IV. F[1]

### Discouraging Ungrammatical Speech

**Summary statement of principles.** Ungrammatical speech is like careless writing in that it is best attacked through the critical attitude of the class audience and by the correctness of the

[1] Related type-difficulties: *Section* I. G. *Section* II. F, G, H, I. *Section* III. A, H, I, J, L. *Section* IV. A. *Section* V. G.

teacher's own speech. Where the pupil has felt both the satisfaction of making brief talks in reasonably pure English and the mortification of being regarded as one who uses expressions that are characteristic of children and illiterates, improvement is often rapid. Reports, written and oral exercises, and vocabulary study should be designed to give pupils the sense of having forever mastered certain necessary forms of expression. Exercises should accordingly be chosen with reference to the expressions which particular pupils find difficult. Exercises should consist of examples to which principles are applied rather than formal rules to be learned.

As a matter of class routine, pupils' errors in speech should be checked by some such inoffensive method as by signaling for the pupil to locate and correct the error, seldom by mechanically correcting it yourself or referring it to the class for correction, — unless the pupil fails to discover it himself. The same principle applies to the marking of papers. Errors should not be marked, though the serious errors may well be counted and the number written on the page for the pupil himself to locate. Such routines tend to develop a coöperative attitude toward the elimination of errors. Pupils who take their work seriously but who habitually use bad grammar are sometimes set right when the effect of bad grammar upon an audience is found to detract from the force of their ideas. When the pupil is willing to try to improve, he should record his more serious errors in a notebook and practice the correct form until the errors are systematically eliminated.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (IV. F)

**1. How to reduce the number of grammatical errors that are due to carelessness rather than to ignorance of the correct forms.**

By adopting the policy recommended in connection with carelessness in written work; namely, by refusing to accept the statement until the errors have been found and corrected.

**2. How to develop an interest in correct speech on the part of ninth-grade pupils from foreign homes.**

By emphasizing the extent to which association with worth-while people depends upon clearness and forcefulness in speech. By recognizing the extent to which the use of "pure" English by foreigners often subjects them to ridicule by their associates. Stress clearness and force rather than elegance of expression, and correctness is likely to improve.

**3. How to encourage systematic self-correction on the part of pupils who hear their own errors pointed out when made by other pupils.**

By encouraging pupils to keep a record of their worst and most frequent errors, and to note these mistakes when made by other persons both in and out of class. Such personal records should be discussed privately at regular intervals until improvement is apparent.

**4. How to coöperate to best advantage with the English department in the collection of mistakes which English teachers can help to correct.**

By writing each persistent error on a card until a number of cards have accumulated. Then ask the English department to classify them. The outlined classification may thereafter be checked for frequency by each teacher to indicate types of error on which all teachers may concentrate.

## Type-Difficulty IV. G[1]

### Late Assignments

**Summary statement of principles.** Pupils' failure to submit home assignments when due may result from incompetence, indifference, or sheer inability to study under the conditions found at home. The teacher's first step then should be to determine, first, whether the pupil fails to understand what he is to

[1] Related type-difficulties: *Section* I. D. *Section* II. H, K. *Section* III. E, G, J. *Section* IV. A. *Section* V. C, D.

do and how to do it; second, whether the conditions under which the pupil studies at home render effective study impossible. If the pupil does not understand the work clearly and if conditions are not conducive to study at home, all assignments should be prepared in class. In any case, the pupil should be required to show that he can manage an assignment by beginning it in class before he is allowed to continue it out of class. Written exercises during the class period can usually be substituted to advantage for much of the home work that is usually assigned. Such work is never "late" and is invariably better on account of the teacher's supervision.

The rule is thus to direct individual work in class until the pupil has demonstrated his ability to complete the assignment successfully. He may then be allowed to complete the work out of class, provided that the period is not sufficient for the practice which the pupil needs. This procedure tends to establish a coöperative spirit in the class and works rather towards success in the work than towards mere completion of the assignment as such. In accordance with the same principle, it is usually wise to provide for the "writing up" of notebooks during the class period. The work is more valuable and the books are not "late."

Lazy pupils respond to this treatment in many cases where they do not respond to coercion. Work done in class is invariably done more efficiently, hence, home study should be regarded as the privilege of those pupils who have learned how to study and who can tell whether they are working efficiently or not. Where the school makes a definite requirement of home study, the home work should be assigned for practice or for extensive reading rather than for study of new material or for any other work in which the pupil is likely to require the teacher's direction.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (IV. G)

**1. How to train pupils to prepare assigned work on time.**

By assigning work in units covering two or three weeks and providing time for all difficult parts of the work to be done in class; by requiring as little work out of class as possible until pupils are able to proceed without the teacher's direction; and by making the completion of an appropriate assignment the condition on which pupils are allowed to do optional work.

**2. How to train less able pupils to come for help rather than shirk assigned work that appears too difficult.**

By giving the pupil what direction he needs to overcome his difficulties and expecting him to apply the same methods in the future. The difficulty is confined to out-of-class assignments, since the teacher is able to discover those pupils who are "stalling" when their work is supervised during the period.

**3. How to make some few members of the class more observant of directions in preparing assignments.**

By having them apply the directions in class under direct supervision.

**4. How to get book reports in on time.**

By simplifying the form of report and by giving the pupil more scope in the selection of books read. If the pupil understands that his sincere opinion of the book will be useful to other pupils at a given time and is encouraged to do his reading in class, the report is not likely to be late. The less formal the report, the more likely it is to be on time. (See collateral reading, I. F.)

## TYPE-DIFFICULTY IV. H [1]

### ABSENCES

**Summary statement of principles.** Pupils' absences cause difficulty by preventing the absentees from interrelating the work of the course. It is difficult for most teachers to fill in the gaps caused by absence without distorting the pupil's perspective.

[1] Related type-difficulties: *Section* II. J. *Section* III. K. *Section* IV. A, G. *Section* VI. C, F.

For this reason deliberate absence on the part of pupils who can readily persuade parents to give them excuses is best attacked by stressing the interrelation between the work of successive days until absentees feel their disadvantage.

Interrelationships are most readily emphasized by a topical outline of the course. Another means of emphasis is the informal test which calls for the application of previous learning to the work at hand. Class coöperation should be secured by friendly insistence upon each pupil's responsibility for all previous work and by justice in dealing with different reasons for absence. Such treatment serves both to discourage and to compensate for absence.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (IV. H)

**1. How to reduce unnecessary absences.**

By demonstrating the fact that make-up work requires more time and effort and is less useful than work done regularly and in proper sequence. Explain that school is the pupil's regular business and that no employer tolerates shirking.

**2. How to prevent absence of pupils who are scheduled to give oral reports or debates.**

By scheduling only those pupils for reports or debates who have ideas they wish to express. By accusing such absentees of truancy or cowardice, either privately or publicly as the occasion demands.

**3. After church holidays, on which a majority of certain classes are absent, how may the teacher secure coöperation of the absentees in making up the work missed?**

By showing the value of the work as a basis for work to follow, and by inviting the group as a whole to suggest the time by which the work will be made up.

**4. How may absentees be shown the poor economy of unnecessary absence by the manner in which the work is resumed on their return?**

By frequent reference to the work missed in connection with the work in progress.

**5. How to deal effectively with tardy pupils.**

By utilizing pupil officers and other means to develop a class sentiment against tardiness; by teaching pupils to feel the same responsibility toward class attendance that the business man feels toward office hours.

**6. How to present the effects of absence upon pupils' success with sufficient force to negligent parents to secure their coöperation?**

By citing absence as the explanation for poor work or the obstacle to better work. Establish cordial relations with parents who may coöperate. Let the law operate in the case of other parents.

## Type-Difficulty IV. I[1]

### Class Disorder

**Summary statement of principles.** Whatever contributes to pupils' interest in the work prevents deliberate disorder and greatly reduces the disorder that is due to carelessness. Subject matter must be adapted to the needs of the class and should be presented in terms of concrete examples rather than rules.

Deliberate attempts to embarrass and antagonize a teacher are occasioned by defects in the teacher's personality, by poor teaching, or by defects in the social training of certain members of the class. Deliberate disorder is therefore prevented by identifying and removing these causes. Disorder due to carelessness is prevented by specific instruction in courtesy and by sharing the responsibility of class management with the pupils.

[1] Related type-difficulties: *Section* I. C, G. *Section* III. B, C, E. *Section* IV. A, B, D. *Section* V. H, K. *Section* VI. A, B, C, D.

The personality traits of the teacher that are essential in the prevention of disorder, are self-confidence, authority (expressed at times by "righteous indignation"), and friendliness. The factors in teaching which tend to prevent disorder are clearness in organizing and presenting work, attention to individual needs, and skill in teaching pupils to study independently. The defects in pupils' social training which lead to disorder are those revealed by discourtesy and by a perverted sense of humor.

In terms of class management, disorder is best prevented by keeping pupils busy. Preparations should be made in advance so that pupils may begin work immediately. Explain the group work to be done, demonstrate it until clear, then allow the pupils to do it. Individual work should be directed by locating the pupil's difficulty, helping him to define the difficulty, and showing him how to overcome the difficulty himself. Such individual direction serves both to keep the class occupied throughout the period and checks disorderly tendencies on the part of pupils so inclined.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (IV. 1)

**1. How to prevent class disorder when the first signs of restlessness appear.**

By introducing some novel feature in the work or by completely changing the character of the work for the time being. A supply of new test material, concrete illustrations, or exercise forms is useful for such occasions. If the restlessness is confined to a few pupils, vary their work as individual needs suggest.

**2. How to quell a disorderly class when a tumult has arisen before the teacher enters the room.**

By selecting the most disorderly pupil and asking him to explain the situation. If the disorder is malicious, by sending two or three of the worst offenders from the room, telling them to think the matter over, and return

in ten minutes. If the disorder is playful, the situation itself should suggest the method of approach.

**3. How to check the tendency to display proofs, photographs, cartoons, and other personal effects while class work is in progress.**

By a personal request, by asking that photographs be displayed to the class as a whole, or by "confiscation."

**4. How to prevent disorder as an outgrowth of legitimate amusement over a ridiculous incident in class.**

By waiting cheerfully for the majority to stop laughing. Then assign specific tasks to the chronic gigglers or question them about the work to take their attention from the incident. The tendency on the part of some pupils to exploit such incidents is best checked by the teacher's own enjoyment of the situation and ability to return to the class work without too great abruptness.

**5. How to appeal to the good sense of the class when disorder is stimulated by the silly grinning, raucous laughter, and other disturbances of a few unruly pupils.**

By working with a few pupils individually, teaching them, if possible, to distinguish between humor and clownishness and between appropriate and inappropriate occasions for humor; by being the first to notice the clowning and expressing disapproval tactfully, thereby discouraging the class from approving it. A clear distinction should be made between real cleverness and awkward clowning.

**6. How to eliminate disorder in the form of "rough house" during dismissal from the classroom.**

By a simple request, by dismissing the class one row at a time, or (in junior high-school grades) by the appointment of pupil "traffic officers." Disorderly pupils may be detained until others have passed out.

**7. How to meet the partially successful attempts of a few pupils to antagonize the teacher.**

By refusing to be antagonized and by making persistent efforts to find and remove the cause of the pupils' attitude. A point-blank question will often reveal the cause. A teacher can usually maintain an impersonal attitude, no matter what the provocation, if he regards the situation as a laboratory experiment in which effects are studied in terms of causes. To express anger at a pupil is to admit his superiority in the given situation and greatly complicates further relations with the pupil.

## Type-Difficulty IV. J[1]

### Dishonesty

**Summary statement of principles.** Dishonesty usually results from the pupils' failure to understand the purpose and meaning of his work. Hence, direction of individual study during the class period tends to eliminate dishonesty from this source. In giving the direction, the work should at first be adapted to purposes which the pupil considers worth while. Class tests should encourage initiative and challenge independent thought. Purely formal tests encourage cheating.

Dishonesty frequently results also from sheer ignorance. The pupil needs to be taught what constitutes dishonesty and why dishonesty does not pay. Efficient instruction to this end, when entirely removed from preaching and supported by an abundance of concrete and accurate illustration, is often enough to set a high standard of honesty for the entire class. Such instruction should be entirely impersonal, as in presenting any other topic of instruction. Assume that there are many things about dishonesty that pupils do not know and which they would like to learn.

[1] Related type-difficulties: *Section* II. A. *Section* III. E, K, L. *Section* IV. A, C. *Section* V. F. *Section* VI. F.

A keen sense of justice is essential in dealing with all offenses. Dishonesty should not be punished until the pupil clearly understands its significance in the particular situation. Bright pupils are often dishonest through laziness; dull pupils more frequently through ambition. Both types require careful study of the individual case and sympathetic instruction rather than penalties. Penalties should be reserved for the comparatively few cases in which deliberate dishonesty is combined with a full knowledge of the immediate and ultimate effects upon others. Punishment in such cases should be severe, and should be determined, as far as possible, by the class itself. A safe rule in dealing with such offenses is to postpone any direct action, thus allowing the teacher time for careful planning and keeping the pupil in suspense.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (IV. J)

**1. How to prevent or cure dishonesty.**

Prevent dishonesty by meeting pupils half way in explaining the purpose of requirements and methods of meeting them; also by demonstrating the futility of evading difficulties. In other words, remove both the temptation and the opportunity to cheat. Cure dishonesty by the same procedure, together with direct, individual, and explicit instruction regarding the greater efficiency of honest work. Preaching differs from instruction in that the latter is strictly impersonal. Dishonesty due to carelessness may be checked by display of "play square" mottoes and other reminders.

**2. How to render bluffing unsportsmanlike no matter how cleverly it is done.**

By emphasizing accuracy and sincerity as essentials in every sort of social relationship; by systematically teaching pupils to detect bluffing in their general reading and personal contacts out of class, as well as in the remarks of pupils in class. The bluffer should be identified with the narrator of "fish stories," who is a good entertainer but not to be taken seriously.

**3. How to handle a case of very evident dishonesty in a test when there is no objective proof, without producing an undesirable effect on the class as a whole.**

By private investigation, further observation, and personal conference in which the evidence is presented for the pupils concerned to explain. If the teacher's manner is impartial and no accusation is made, the offenders should not be antagonized and are more likely to coöperate. If pupils' names are not mentioned, it is sometimes well to lay the matter frankly before the class for discussion.

**4. How to discipline two pupils whose papers are duplicates.**

By asking the pupils to explain the similarity, by investigating the underlying causes of the particular offense, by discussing the causes with the pupils concerned, and so convincing them that honest methods would have proved more satisfactory. In the case of chronic offenders, emphasize the fact that they must be watched (as by placing them on front seats) until they regain the confidence of the class as persons to be trusted.

**5. How to discourage prompting in oral recitations.**

By reducing the emphasis on *mere* memory work, which should represent independent thinking. Recitations should be confined to the pupil's *prepared* statements of conclusions he has reached in his study. Give instruction to pupils who need it upon the discourtesy and futility of prompting. Direct the prompter to explain his suggestion to the class if it is likely to prove incorrect.

**6. How to deal with the habitual liar.**

By demonstrating the unpleasantness of having one's statements ignored, as the liar's statements usually are; by setting daily exercises in which he is required to make accurate statements of fact; or by allowing him to gratify his instinct for fiction in writing, dramatizing, and other appropriate fields, when his lies are sufficiently picturesque.

**7. How to discourage plagiarism in written work.**

By systematic instruction in the history of copyright, professional ethics, and practice in citing authorities; by private conference with plagiarists in

which the importance of sincerity and the futility of misrepresentation in all social communication are clearly explained and illustrated.

### 8. How to break the habit of keeping books open in spite of directions to the contrary.

The wisdom of the "directions to the contrary" is open to question, since they imply too great emphasis on the formal memorizing of textbook material. If the disobedience is not confined to this particular act, further study of the causes of the pupils' antagonistic attitude should suggest procedures to remove causes.

## SECTION V

## DIFFICULTIES ARISING FROM THE PERSONAL CHARACTERISTICS OF INDIVIDUAL PUPILS

### Summary Comment Concerning the Type-Difficulties of This Section

*Study the troublesome pupil in order to determine the personal qualities he most needs to develop, such as courtesy, honesty, or self-confidence. Select a number of situations in which these qualities should be expressed; for example, meeting strangers, taking examinations, or making oral reports to the class as a whole. Arouse the pupil's desire to develop the personal qualities. Then teach him specifically how to meet the particular situations and give him practice in meeting them until the desired personal trait or quality has been developed.*

Pupils' differences in personal traits like pupils' differences in other respects defy any general prescription. Each case must be studied by itself. Personal traits that are sufficiently extreme to constitute difficulties in teaching, demand careful observation, tact, and all the teacher's wisdom. Detailed examination by a clinical psychologist is always best in problem cases, but is seldom possible. When no expert advice is available, the teacher should first win the pupil's confidence by whatever means he can, then try to discover the cause of the pupil's eccentricity in home conditions, school environment, or elsewhere; and finally, experiment with whatever suggestions and directions seem most likely to induce the pupil to modify the troublesome trait. The

cause of personal peculiarities can often be suggested by having pupils write answers to a list of questions concerning home interests, and other significant items.

Of the pupil types listed in this section, the most troublesome are usually the timid pupil, the apathetic and lazy pupil, and the bright-dishonest pupil, — for the reason that these traits are frequently caused by experiences of early childhood. By locating the cause and explaining it to the pupil, it is often possible to make him see his defect more objectively and thereby encourage effort to overcome it. Timidity often yields to this treatment. When the teacher has discovered the reasons for the pupil's shrinking attitude and has shown these fears to be groundless, he can indicate various social situations in which the pupil is at ease and in which he can learn to express self-confidence. Unstinted praise is useful here when the purpose is to develop personal pride.

The dull-loafer is the result of low intelligence, parental neglect, or physical defects, all three of which are largely beyond the teacher's control. Such pupils do respond to intelligent sympathy to the extent of making more effort when convinced of the teacher's personal interest and willingness to adapt the work to their needs.

Bright and dishonest pupils are usually produced by parental neglect or by familiarity with the dishonest practices of parents or associates. They are accordingly very difficult for the teacher to reach through the ordinary classroom contacts. While any other method may well prove superior in the individual case, it is a safe procedure to try to reach such pupils through other pupils whom they respect and who are often in a better position than the teacher to "talk the pupil's language." Firmness is, of course, essential in dealing with any form of dishonesty, but to antagonize a pupil is to lose all chance of changing his ideals

for the better. A small amount of hero-worship has more effect upon pupils of this type than any amount of coercion.

Timidity, dullness with laziness, and brightness with dishonesty — all three are also sometimes the effect of purely temporary conditions that readily yield to the proper approach. Whether such traits are temporary or firmly established, the first step should be to discover the cause of the abnormality.

Overzealous pupils and those who are dull but conscientious are less serious problems. The former should be shown how to express their zeal in connection with the class work so as to win due recognition. Conscientious "pluggers" need to be shown objectives within their reach and ways of making better use of the abilities they have developed. Bright but lazy pupils are usually an index of poor teaching. They normally respond to any challenge to their common sense that allows them to demonstrate superiority. As a means of stimulation merely, competitive exercises are effective in overcoming laziness. The pupils should be held strictly accountable for definite tasks performed at definite times when the teacher is sure they have clearly understood the purpose of the tasks assigned.

Pupils of uneven abilities, — that is, those who excel in some parts of the work and fail in others, — are often the victims of poor teaching in previous grades. Individual instruction, systematically conducted on the basis of particular deficiencies, should be carried on in connection with the current work of the class. Proper coaching can usually repair deficiencies and give the pupil confidence in his ability to manage the work as a whole. Such coaching is, however, seldom possible unless the work is organized so that most of the class period is given to individual study.

Clowns and humorists who are clever need to be shown the proper times and methods of expressing their cleverness. Those

who are not clever, and who perform antics for the applause of other pupils, need to be shown the difference between applause and ridicule, and then given a sufficient amount of the latter. To oblige the pupil to repeat his antics at obviously inappropriate times is often enough to demonstrate their crudity and so to deprive the pupil of his appreciative audience.

Difficulties arising from personal animosities between pupils, sex references, and personal peculiarities of other kinds, cannot be covered by general comment. Each case requires individual study. The motives for such behavior may be analyzed, and motives, when found, often point to remedies. Personal animosities may usually be suppressed in class meetings by private conference with the pupils concerned. Pupils' ill-feeling shortly disappears if the teacher prevents its expression in the classroom. Sex references may often be checked by inviting the pupil to explain his allusion, thus suggesting that the allusion is a natural matter of fact and shaming him into silence at the same time. The teacher's honest frankness regarding sex allusions will tend to prevent the furtive suggestiveness of such allusions, wherein lies their danger. Courtesy toward pupils with either physical or mental infirmities, or incurable peculiarities of whatever sort, should be systematically taught by the teacher's example and private conferences with the discourteous.

## Type-Difficulty V. A[1]

### Timid Pupils

**Summary statement of principles.** Timidity is usually shown by pupils' reluctance to ask for explanations when needed. It is overcome by the growth of self-confidence which takes place

[1] Related type-difficulties: *Section* I. B, C, D, J. *Section* III. E, M. *Section* IV. A, C. *Section* VI. C, H.

in situations that are easy to meet. Each case demands careful study to determine causes.

Regular class work should be simplified for timid pupils to the point where they see its purpose clearly and are willing to undertake it. This demands care in planning the first presentation of any new work and patience in explaining it until it is sufficiently clear. Timid pupils should never be excused from any part of regular class assignments without clearly understanding why. They should be impressed by the fact that the teacher's purpose in excusing them is to develop their independence and capacity for hard work later by helping them to get rid of unreasonable fears. Yet, timidity should be ignored as far as possible. The teacher should make no concessions unless convinced that the pupils' fears are genuine. Much timidity toward class work results from pupils' failure to relate successive units into a meaningful whole. They cannot "see the wood for the trees." The teacher should accordingly do his best to make subject matter coherent for these pupils by individual guidance. By directing individual work during the period, the teacher can remove the pupil's apprehensions as they arise and can help him to concentrate upon one difficulty at a time. This principle is important in the teacher's correction of written work. The pupil should not be overwhelmed by the number of errors indicated.

The coöperative class atmosphere that encourages initiative and prompt reporting of difficulties is the best cure for timidity. When two or more pupils are at work on undertakings that demand full attention, timidity is forgotten through interest in the work. Formality of any sort when imposed by the teacher tends to produce apprehension of requirements rather than attention to work. Hence, the teacher should use every means of sharing his interest in the subject with timid pupils, and should

show the friendly interest in home activities and other personal matter which win the pupil's confidence.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (V. A)

**1. How to approach bright pupils who lack self-confidence.**

By providing occasions for them to discover their abilities, as in monitorial work and special assignments, and by gradually increasing the amount of their responsibility for the work of the class as a whole. Asking such pupils to make a list of things they have done which they are proud of, helps to prevent them from thinking only of their failures.

**2. How to secure the coöperation of pupils whose lack of self-confidence seems justified by their lack of ability.**

By delegating tasks within their abilities and demanding a high grade of performance. Give prompt recognition to signs of improvement in self-confidence. Place the timid pupil under the direct responsibility of reporting his difficulties as soon as he has made a conscientious but unsuccessful effort to overcome them. Do not oblige him to address the class until his fears have disappeared.

**3. How to draw timid pupils into the class discussion.**

By taking pains to discover and assign material in advance which the given pupils are able to contribute, giving them the chance to volunteer, and then asking direct questions at appropriate times, if necessary.

**4. How to help pupils to overcome bashfulness.**

By reducing the formality of the class procedure, winning the pupil's personal confidence, and pointing out specific ways of overcoming his bashfulness, — such as by looking at the persons he talks to, speaking loud enough to be heard, thinking out what he has to say beforehand, and other suggestions that apply to the pupils' difficulties.

**5. How to put pupils at ease who worry needlessly about their personal appearance.**

By assuring them that everyone has such worries but soon learns to overcome them, by pointing out cheerful people with serious deformities, and by showing them other more important things to worry about.

**6. How to help timid pupils make friends with classmates who can overcome their timidity.**

By suggesting casually to certain pupils that the timid one admires them but does not like to make advances. Well-planned group assignments offer an opportunity to bring such pupils together. If the self-reliant pupil is given responsibility for helping the timid pupil with his work, he is likely to adopt him as a protégé, often to mutual advantage. Timid pupils often forget their timidity when given responsibility for pupil organizations. To discover the pupil's out-of-class hobby, and make of this a point of contact, is often the means of overcoming the pupil's inhibitions toward his regular class work.

## Type-Difficulty V. B [1]

### Overzealous Pupils

**Summary statement of principles.** Excessive zeal may result from naturally high nervous tension, boredom, or desire to attract the attention of teacher and classmates. High nervous tension requires variety in the work and as much physical activity (or freedom from physical restraint) as classroom conditions permit. Boredom demands adaptation of work to pupil needs and abilities, — as by individual assignments to collateral reading that contains material of particular interest or value to the pupil concerned. Desire to attract attention requires direction towards more important ends by the teacher's commending work well done and by disapproving mere advertising. Special assignments to consume surplus energy may profitably involve such work as makes for better perspective of the course; for example, wider collateral reading, reports on previous topics as related to the unit being studied, and collection of illustrative materials from personal experience, casual reading, and observation.

A direct question related to the private interests of the pupil

[1] Related type-difficulties: *Section* I. D, F, I. *Section* II. C, E. *Section* III. E, F, G. *Section* IV. A, B, D. *Section* VI. B, E.

will often release the tension which otherwise proves troublesome. Requests to assist in providing materials serve the same purpose. The time of making assignments and of giving specific directions for a given phase of class work may be chosen with respect to the need for variety in the class procedure. When the major part of the period is given to work upon written exercises, the direction to exchange and criticize papers also makes for variety. A coöperative interest in getting work done rather than in aimless activity will meet the difficulties caused by overzealous pupils. Such interest is fostered by clearness of presentation and the exercise of tact in redirecting fidgety pupils to their work without arousing antagonism. When the pupil's desire for recognition leads to discourtesy and to irrelevant talking, the standard remedies are to suppress him in class by showing that his remarks are off the point, win his coöperation by showing interest in him out of class, and then supply direct teaching of courtesy in particular classroom situations.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (V. B)

**1. How to restrain an overzealous pupil without killing his interest;**

By shifting from discussion or recitation work to the individual study basis as promptly as possible.

***a.* When his comments are intelligent and pertinent.**

By allowing him to make his comments without restraint and then suggesting further study to supplement or justify them, provided the comments are made privately so as not to confuse other pupils.

***b.* When his remarks are well intentioned but irrelevant.**

By referring him to sources where he can discover the irrelevancy and cover the point at issue. Teach him how to check the relevancy of his own remarks by practice with best-answer exercises.

*c.* **When his desire to participate leads to class disorder.**

By anticipating his desire, if possible, and giving him some chance to express himself; otherwise, by letting him resume individual study. Check class disorder by providing relief from restlessness.

**2. How to restrain a pupil who, having received permission to entertain the class with his violin, wishes to perform so often that he becomes a nuisance.**

By withholding any such permission except at times of special programs. Simply inform the pupil that there is no time for further performances in class.

**3. How to restrain a bright pupil who has always a ready answer when another pupil fails to meet a question, and who tends to monopolize the period.**

By reducing the time given to oral questioning and increasing the time given to individual or group study for the preparation of reports or other exercises on the given unit of work. Use every opportunity to teach him the importance of reserve in any sort of group discussion or conference.

**4. How to discourage a pupil who continually offers unimportant criticisms.**

By providing opportunity for criticisms at stated times — as in connection with pupils' reports — where the unimportance of the pupil's criticism will be evident by comparison with others. Teach him patience towards others as a means of winning their respect.

**5. How to organize the class work so that overzealous pupils may be allowed to work at their own rates of speed, thereby using up their surplus energy.**

By presenting a given unit of work in terms of a single organizing principle and directing pupils individually to apply this principle to reading or in other ways as the major classroom activity. Direct suggestions to the overzealous pupil concerning special or additional work may then be made whenever occasion demands.

## Type-Difficulty V. C[1]

### Bright and Lazy Pupils

**Summary statement of principles.** Intelligent but lazy pupils are often aroused by collateral reading in the given field. Hence, a comprehensive list of reference materials that are intrinsically interesting and related to the various topic units of the course may be used to good advantage. Pupils of this type usually read a considerable amount of trashy literature. To capitalize the habit into a liking for "popular" treatments of the school subject is therefore a good first step.

Laziness is often overcome by requiring pupils to prepare and submit a time budget for the day or week. This obliges the pupil to plan his work to some extent and serves to emphasize the amount of time previously wasted. Reports and written exercises, by which pupils can compare the results of each others' work, should be followed by private conferences with lazy pupils wherein the teacher shows specifically how better results are secured.

Lazy pupils should be required to begin work promptly at the outset of the period, when once they fully understand the purpose of the work assigned. Their study should be directed by questions related to the efficiency of their work until the work is under way. Direction of individual study during the class period is the best single cure for laziness.

The general activity of the class, as apparent from the degree of attention and amount of initiative shown, has a direct effect upon pupils with lazy tendencies. Whatever the teacher does to increase the coöperative industry of the class as a whole will react favorably upon the lazy. Test scores may be used to

[1] Related type-difficulties: *Section* I. F. *Section* II. A, G, H. *Section* III. C, E, K. *Section* IV. A, B, C. *Section* V. G, H. *Section* VI. B, E.

advantage in showing the pupil how far below his abilities he is working.

Laziness is often an indication of indifference towards, or special disability in, certain phases of the work. Each of these requires remedial teaching. Authority in insisting upon honest efforts and patience in teaching more efficient methods of work are the teacher's major qualifications in dealing with lazy pupils. Where the laziness results simply from the fact that the class work is too easy to challenge the pupil's abilities, the remedy is to study the pupil's abilities and interests until more profitable work may be assigned to him.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (V. C)

**1. How to stimulate the bright loafer.**

By assigning well-selected reading, by indirect appeals to his pride, by pretending to doubt his ability, by winning his confidence, by obliging him to plan his work and to carry out his plans, and by holding him responsible for more than the average amount of work.

**2. How to keep the super-intelligent pupil busy.**

By locating his special interests and types of experience, giving him every encouragement to read and write of these interests in relation to the work, giving him responsibility for the direction of a conference group, and directing his work specifically whenever his own suggestions run out. Any unit of work should be planned with the bright pupil in mind to insure sufficiency of material.

**3. How to prevent bright pupils from studying during class recitation.**

By excusing them from the recitation but not from the room, and directing them to proceed with individual work. Confine recitations to prepared talks wherever possible so that the pupil talking may have more than perfunctory attention.

**4. How to arouse the bright pupil who lacks ambition to study.**

By attempting to find mutual interests out of school, encouraging him to discuss his plans for further study and choice of vocation, and suggesting points of contact between these interests and the work of the course. The suggestions in Nos. 1–3 also apply.

**5. How to appeal to the able senior who feels he does not need to study in order to graduate.**

By the procedure described in No. 4, reinforced by the explanation that failure to use his time to advantage shows failure to meet the requirements of the course, which is sufficient ground for failure.

**6. How to convince the bright loafer that his cleverness and consequent popularity would be increased rather than diminished by serious attention to his studies.**

By pointing out specific scholastic attainments in connection with pupil organizations and offices, perhaps, and by showing their social values. When class work has been convincingly presented, its successful accomplishment is a social asset. Appeal to his scholastic interests, however dormant, by arousing his pride in things he can do well.

**7. How to utilize extra-curricular activities as a means of getting the bright loafer to assume school responsibilities.**

By asking pupil officers of such activities as may be related to the course to encourage the pupil to take part in the activity; then help him to meet his responsibilities in the organization by assigning and directing him in special lines of work. Coöperation with teachers of other departments to the same end may greatly improve his sense of responsibility toward school work in general.

## Type-Difficulty V. D [1]

### Dull and Lazy Pupils

**Summary statement of principles.** Dullness and laziness are so easily confused that a teacher does well to investigate apparent stupidity by every means available. Routine mental testing

[1] Related type-difficulties: *Section* I. E, F, I, J. *Section* II. G, H, K, L, O, P. *Section* III. C, K. *Section* IV. A, B, C, G. *Section* VI. D.

should be supplemented by close observation and frequent discussion of the pupils' difficulties in learning. Apparent inability to learn at a rate consistent with membership in the class group may be entirely the effect of confusion regarding the teacher's aims and the meaning of the course as a whole. First efforts to arouse the pupil may well consist of attempts to make units coherent by means of outline and direction sheets. The next attempt should be to discover collateral reading which mediates between what he likes to read and material related to the course. Repeated and clear explanations of points not understood should be supplied in supervision of study in class.

Reports and exercises should contain some elements that are sufficiently simple to give the pupil a sense of accomplishment. Reviews should be followed up by classroom conference until essential principles and points of view have been mastered. Tests should likewise determine whether the principles have been grasped to the extent that the pupil is able to apply them in future study and to recognize the more obvious of their applications to life situations. Adequacy of explanation is important. Too much detail in the teacher's explanation is as confusing as too little.

Laziness is discouraged by the custom of beginning each period promptly. Secure the full attention of each member of the class before giving general directions or explanations. Encourage the initiative of energetic and lazy alike by allowing as much freedom as is consistent with efficient study. Require daily evidence of results accomplished in study, and experiment with other approaches until improvement is evident both in the pupil's willingness to exert himself and in rate of progress. Frequent testing on an objective basis helps the pupil to discover his deficiencies and enables the teacher to direct his attention to such of these as may be overcome.

The class work in general must develop a coöperative attitude if dull and lazy pupils are to be reached. Attention and initiative should be aroused by the definiteness and meaning of the work presented.

Success in dealing with dull and lazy pupils demands the impersonal attitude which alone develops sufficient patience to find and remove causes for the pupil's failure. " Righteous indignation " is seldom justified in dealing with such cases.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (V. D)

**1. How to proceed with the slow and indifferent pupil who persistently refuses to work.**

Seek the cause of his refusal when a basis of friendly discussion has been established, and remove the cause, if possible, by pointing out the benefits he may expect immediately in proportion to his efforts — such as self-respect, social standing, respect of teachers, command of useful ideas, skills, and attitudes, and the like. In case his stubbornness is clearly the effect of home spoiling, severity is often the necessary first step.

**2. How to stimulate a " repeater " who ignores home assignments without good reason.**

By having him do the work in class periods under such stimulus and direction as his interest and difficulties render most effective. The work assigned should, of course, be different for repeaters.

**3. How to arouse a failing pupil who is indifferent to his failures.**

By indirect approaches, by trying a number of different approaches until an effective approach is discovered, by investigating the cause of his indifference, and by using other pupils as examples to illustrate appeals which are tactfully selected and appropriately timed. Such pupils are often best aroused by directing them in work that is conspicuously different from the regular work of the class.

**4. How to encourage a pupil to participate who offers his dislike for the subject as an excuse for his indolence.**

By experimenting with various means of sharing interest in the subject, by checking the validity of his excuse, and finally, by regarding his attitude as a disciplinary case, if his attitude is deliberately antagonistic. Make a careful study of his out-of-school interests and share them whenever possible.

**5. How to arouse sufficient interest in a backward pupil to enable him to follow the discussion or explanation of points not clear to him.**

By having him devote the major part of class time to individual study in which his difficulties are systematically located and attacked. Make every effort to give him the feeling of overcoming difficulties by perseverance, and praise him whenever he succeeds. Teach him to record and follow up the points not understood.

**6. How to approach an indifferent pupil who is an habitual truant.**

By negotiation with parents, by presenting as the basis of his study those phases of the subject most likely to appeal, and by consistency in allowing the law to take its course.

**7. How to proceed with a delinquent pupil who refuses to remain after school to complete work he should have brought to class, giving as his excuse that he has to work for wages after school.**

By devoting the regular class period to study and requiring no home work other than voluntary continuation or practice of work done in school.

**8. What different lines of approach should be tried with a boy who does poor work, wishes to leave school, antagonizes two of his six teachers, and is generally insubordinate?**

The lines of approach suggested. The boy should be studied, referred to aspects of the subject most nearly related to his experience, induced to plan his work, approached by other pupils whom he most respects, and followed up in class as specific difficulties are met. Coöperation with other

teachers is essential. Try to find his vocational interests. The insubordination should yield to interest in the work when a useful interest has been discovered. When the pupil's attitude tends to demoralize the class, he should be given "solitary treatment."

**9. What are some useful methods of reclaiming a flighty high-school girl from her devotion to anything that is trivial and which is in any way associated with " a good time "?**

Indirect approach through her more seriously-minded girl friends, friendly encouragement to participate in appropriate school activities, and use of class sentiment to discourage flightiness as shown in class work. Confidential talks based upon mutual interests in sports and hobbies are likely to develop respect for the teacher which may transfer to greater respect for the work. Ideals are best developed by casual and informal discussions of behavior in difficult situations.

## Type-Difficulty V. E[1]

### Dull and Conscientious Pupils

**Summary statement of principles.** Conscientiousness in pupils who learn slowly may often conceal the fact that the pupils are working in the dark. Previous instruction may have developed habits of perseverance which cause the pupil to mull over his work without finding out what is expected of him. In other words, he is what Professor Morrison calls a " lesson learner "; he has been taught to get lessons but gets little else. Pupils of this type particularly need to be taught to plan their work, after first making sure that the purpose of the work is clear.

Concise summaries of each new unit or division of the course should be presented by the teacher in advance. For pupils of the type here considered, these summaries should be interrelated to give perspective of the course. Study should be done entirely during the class period. The pupil's difficulties should be defined for

[1] Related type-difficulties: *Section* I. E, I, J. *Section* II. A, G, J, N, O, P. *Section* III. E, M. *Section* VI. C.

him in terms of the results he is working for. Methods of study whereby these difficulties can be overcome should be clearly explained and illustrated. The pupil should be prevented from "working for the teacher" whenever signs of this tendency appear. The content of the pupil's study should be related as closely as possible to the out-of-school activities with which he is familiar, thus preventing him from regarding "lessons" as ends in themselves. Oral and written exercises should serve the same purpose. Drill work of the conventional type should be postponed until the pupil sees the need of improvement in the given skill. Reviews should be frequent and planned for and with the individual pupil. Tests should encourage initiative and sense of direction rather than routine performance. Such pupils especially should be required to find and correct their own errors in papers submitted, in connection with the purpose for which the papers were written. In all relations with such pupils, a friendly basis of coöperation must be established to prevent discouragement.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (V. E)

**1. How to proceed with the industrious but apparently stupid pupil.**

As suggested; namely, by winning his confidence, determining the extent of his "stupidity," locating his specific difficulties, combating the tendency to learn lessons as such, and relating class work closely to his familiar out-of-school experience by supervision during study in the classroom.

**2. What opportunities to recite should be given a pupil who is repeating the course?**

The same opportunities given to other pupils. Recitations should ordinarily be confined to prepared talks upon topics which the pupil has studied and which the class needs (or would like) to be informed about. Recitations should not be used for purposes of oral testing nor for the purpose of having pupils explain matters that are more clearly explained by the teacher.

**3. How to secure satisfactory results from a pupil who fails entirely to grasp the matter under discussion when the rest of the class has grasped it.**

By directing his independent study of the data upon which the understanding is based; by giving a brief and clear explanation to him in private; by teaching him to form his understanding by his own study rather than by class discussion, and to ask for help whenever he fails to understand what is expected of him.

**4. How to be sufficiently tactful in reëxplaining points to slow pupils.**

By offering any necessary explanation to such pupils privately and in connection with difficulties they have met in their own work. No tact is required if the explanation is made individually. When several need the explanation, it may be addressed to those who need it as a group.

**5. How to prevent a dull child who anticipates failure from becoming permanently discouraged.**

By taking sufficient pains to make clear by demonstration the particular methods of study which the pupil should apply to learn the given material, then encouraging the pupil to concentrate upon the difficulties he meets in applying these methods, taking one difficulty at a time.

**6. How to help a pupil who continues to do failing work after seven weeks of school.**

By systematically locating the causes. When the cause is due to deficiencies of previous instruction in methods of study, discount the idea of failure and help him to plan ways of meeting the specific difficulties of the given unit of work. When no other cause can be found experiment with simpler assignments and closer supervision of classroom study.

**7. How much extra time should ordinarily be given to each backward pupil?**

As much as he needs during the class period in order to understand what results he is working for and the first steps to take toward securing them.

Time should be used to teach the pupil how to help himself, not to do the work for him. Most time is required to adapt the subject matter to his needs.

**8. How to find out the immediate causes of an individual pupil's failure.**

By personal interview, consultation with classmates, examination of school records, mental testing, observation during study, silent reading tests with the time element subordinated, and particularly by evaluating the basis by which the teacher estimates failure as applied to the given course and the needs of the pupil concerned. Consultation with other teachers is sometimes helpful.

**9. How to handle the subnormal pupil who asks "queer" questions which demand careful and extensive explanations.**

By postponing replies to such questions until the pupil can be taught how to distinguish between relevant and irrelevant questions. When such a question represents a real perplexity, it should be answered privately.

**10. How to arrange for the mental testing of dull pupils by competent persons in order to find out whether pupils are really incapable of doing work of the grade.**

It is doubtful whether anything short of a thorough clinical examination could produce any reliable evidence. A better test is the close observation of the pupil at work in class upon problems of normal difficulty in the given course.

## Type-Difficulty V. F[1]

### Bright but Dishonest Pupils

**Summary statement of principles.** Bright pupils who practice dishonesty are usually of two types: those who have become lazy because their school work is too easy, and those who shirk work

[1] Related type-difficulties: *Section* I. E, K. *Section* II. D, K, L, P. *Section* III. E, K, L, M. *Section* IV. A, B, C, J. *Section* VI. B, C, D, E.

because of its apparent futility. The remedy in both cases is to relate the course to life and to make the relation obvious. This demands selection of objectives that are valid for the given class, subject matter clearly organized with reference to these objectives, and coherence of the units thus organized. The presentation of subject matter should enable bright pupils to form genuine appreciations of the course, which help to prevent dishonesty. In teaching such appreciations, as in other phases of the work, it is important to avoid any elaboration of points that are obvious to bright pupils. When the point of an explanation has been grasped by the brighter pupils, they should be allowed, whenever possible, to proceed with other work. Such recognition is often sufficient to discourage dishonesty when the dishonesty proceeds from the desire to impress other pupils by evading requirements.

The teacher's direction of class study should serve to emphasize the purpose and meaning of the work in relation to the pupil's sense of values. Tests should be so constructed as to rob dishonesty of its motive, which is to secure credit and avoid work. A test meets this requirement when it confronts the pupil with a new situation and challenges him to reach sound conclusions regarding it by applying the results of his previous study. Reasonable precautions to prevent copying, which should enlist the coöperation of the class, will further serve to stimulate initiative and discourage the formalism that breeds dishonesty.

The teacher's traits of personality that best encourage honesty are firmness, justice, friendliness, and interest in the individual pupil's attitude toward the work. Reasons for dishonesty in all dealings with others must often be taught to pupils with inferior home environments as systematically as any other work of the course.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (V. F)

**1. How to help a bright but dishonest pupil.**

By making him recognize the wide distinction between written papers and the learning which the papers are supposed to indicate. Papers and other class performances may be dishonestly produced, but learning cannot be. Illustrate by effective examples the futility of self-deception and the importance of finding out reasons for study before undertaking it. Explain the golden rule specifically whenever the pupil takes an unfair advantage. Utilize class time to make these points convincing to the pupil by illustrations taken from dishonest practices in real life. Good sportsmanship should be taught by effective examples at every opportunity.

**2. How to reprove an ambitious boy who changed the mark on his report card from B to A.**

By giving him thereafter no marks other than satisfactory and unsatisfactory. The attitude expressed by such forms of dishonesty often results from the pupil's repression at home and from his having always been treated as a baby. To treat him as a responsible person is often the means of changing the attitude.

**3. How to discipline a bright pupil who is insolent and something of a sneak.**

By taking the attitude that he does not know better and teaching him the fundamentals of courteous behavior. Try then to discover specific causes for his insolence to you and experiment with different ways of removing the causes. The best cure for his sneaky tendencies is to teach him straightforwardness in connection with every remark he makes. If he is not frank, refuse to take him seriously.

**4. How to teach the principle of *noblesse oblige* to a highly intelligent pupil who nevertheless seeks to receive credit for perfect work by dishonest means.**

By saying in effect, "The class cannot do successful work unless you assume responsibility for it." Then hold him responsible for the conversion of other non-coöperative pupils. Give him to understand that because of his ability he is more largely responsible for the class attitude than other pupils.

## Type-Difficulty V. G[1]

### Uneven Abilities

**Summary statement of principles.** Efficient handling of pupils whose abilities in certain phases of the work are superior and in others inferior is a challenge to the teacher's command of subject matter. The teacher's command of the subject should be so extensive that other material may be used for the improvement of certain abilities whenever the material originally chosen proves unsatisfactory. Subject matter must be adapted to the background of such pupils in order that they may feel its importance. For example, pupils who read intelligently but write poorly should be given concrete suggestions which lead to self-improvement in writing what they like to write. Assignments of each unit of work demand clearness of explanation, should utilize concrete examples in preference to abstract statements, and should directly encourage initiative in removing the deficiencies.

Deficient abilities may likewise be improved by demonstrating the interdependence of abilities that contribute to the mastery of the subject matter. Explicit directions whereby the pupil's methods of study may overcome his deficiencies should be followed up by proper supervision. Drill upon study exercises until bad methods of study have been corrected. Tests constructed by the teacher and close observation of the pupil's study, help both in motivating and in checking improvements. Pupils' papers should be returned with comment concerning the degree of improvement shown and suggesting steps toward further improvement. Corrections should be made by the pupil without assistance, then checked by the teacher.

Deficiency in certain abilities often results from the pupil's

[1] Related type-difficulties: *Section* I. B, C, D, E, G, J. *Section* II. K, N. *Section* III. E, K, L, M. *Section* IV. A, B, C. *Section* V. A, C, D, H, K. *Section* VI. C.

timidity, from excessive interest or experience in certain phases of the work combined with indifference toward other phases, and from either superiority or inferiority in special lines of work as the result of previous training. Friendliness helps to develop a coöperative attitude and willingness to work upon specific weaknesses.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (V. G)

**1. How to help a pupil correct deficiencies in certain parts of his work which result from lack of interest.**

By substituting other subject matter of greater interest which involves the same ability. When this cannot be done, convince the pupil that to correct the deficiency will increase his interest in the work as a whole, and allow him to substitute optional work to the extent that he overcomes the weakness.

**2. How to assist a pupil who fails examinations but who does excellent work in daily recitations and reports.**

Experiment with other types of tests, omit formal final examinations if school regulations permit; and determine pupil progress by frequent tests based upon his independent study. Study him to discover the reasons for trouble with examinations and teach him how to prepare for and write examinations more efficiently.

**3. How to encourage a pupil who does well in written work but very poorly in oral work.**

By giving him opportunity to *prepare* his oral work and by requiring him to talk only when he has something to say which is interesting and profitable to the class audience.

**4. How to group pupils for better instruction according to abilities in which some are deficient.**

By pretests on each unit, standardized tests in the given subject, tests constructed by the teacher upon the particular phase of the work, observation of class work, and oral interview. The two methods last mentioned

are perhaps the most useful means of obtaining the necessary information. Pupils of different ability groups should then receive different study assignments.

## Type-Difficulty V. H[1]

### Clowns and Humorists

**Summary statement of principles.** Effective handling of the habitual jester in class requires the same sort of resourcefulness by which anyone parries a remark intended to be embarrassing; that is, by being in sufficient control of the situation to turn the joke aside or turn it back upon the jester without causing resentment. The teacher must meet each attempt at ridicule on even terms, diagnose the pupil's motive, and then take whatever action will make for the best coöperation in the work at hand.

Control of the teaching situation demands adequate command of the subject in the large, not merely familiarity with material assigned. Ability to refer troublesome points to their commonsense applications in real life for more convincing explanation is usually sufficient protection against the pupil who consistently attempts to burlesque the course. This ability, moreover, enables a teacher to adapt work more closely to the needs of the class whenever the material chosen for study fails to suggest the familiar life applications which other material might suggest.

Prevention of irrelevant jesting demands that work be commenced promptly at the outset of the period and that each pupil keep his mind on his work. In oral explanation by the teacher or general discussion, irrelevant comments by the pupil should be related to the point before the discussion proceeds. If pupils are always challenged to explain the bearing of their remarks on the point at issue, they are not likely to sidetrack discussion deliberately.

[1] Related type-difficulties: *Section* I. B, C. *Section* II. E. *Section* III. C, E. *Section* IV. A, B, C, D, I, J. *Section* V. G, I, K. *Section* VI. A, B, D, E, G, H.

Class coöperation to prevent deliberate foolishness is brought about by whatever procedures will place responsibility on the class. Pupils' close attention to work demands freedom to exercise initiative, mutual courtesy between teacher and class, organized sentiment against malicious disorder, and the coöperative planning of work that tends to remove all motive toward dishonesty. Especially does the need for direct teaching of courtesy apply to those pupils who tend to ridicule other pupils whom they dislike, whom they see to be troubled by certain types of class work, or who have various personal peculiarities.

The teacher's personal equipment in dealing with habitual jokers should include a high degree of self-confidence, willingness to exercise authority and to insist on fair play, interest in the personalities of individual pupils, and sufficient sense of humor to appreciate the pupils' point of view. The fact that jokers are usually found among the more intelligent members of a class makes it highly important that these pupils be converted early in the course to a coöperative attitude. It is thus necessary to identify them promptly and to locate their special interests and abilities by private conference.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (V. H)

**1. How to handle the pupil who parodies the teacher's questions.**

By asking him to meet you in private conference where the essentials of courteous behavior can be explained to him. Frame general questions with such care that any attempt to misinterpret them becomes conspicuously discourteous. When a pupil commits the offense, a statement to the effect that you wish to explain the question to him in private will usually keep him in place for the remainder of the period.

**2. How to direct the class artist who feels obliged to decorate the board every day with cartoons and caricatures.**

By asking the class to propose subjects for his cartoons which bear upon some phase of the course. Ask him to make whatever board illustrations are needed, and to make only such decorations as are approved in advance.

**3. How to deal with the class clown who pokes his neighbors and laughs until they share his laughter.**

Isolate him, make him conscious of his lack of good manners by private conference, locate the specific difficulties which cause his attention to wander, and develop his sense of dignity by giving him some direct social responsibilities in the classroom.

**4. How to squelch a pupil who " takes off " other pupils in the class.**

By explaining what would happen to him if he did this in public. Show him that the habit of ridiculing other people usually results in loss of friends and consequent loss of self-respect. Help him to distinguish between laughing with others and laughing at others.

**5. How to deal with the humorist who prefers his reputation as the class wit to any other sort of recognition he might win.**

By undermining his reputation as a class wit. Pay him back in his own coin when his humor is disconcerting to the class. Give other pupils the opportunity to point out the fact whenever he becomes a nuisance. Provide opportunities for him to acquire reputation for other accomplishments.

## Type-Difficulty V. I [1]

### Personal Animosities between Pupils

**Summary statement of principles.** Disputes between pupils during the class period are usually caused by the desire to attract attention rather than by personal animosity as such. Disorder resulting from such disputes is accordingly best prevented by direct instruction in courtesy and by establishing a coöperative atmosphere. Outbreaks of temper on the part of the pupil

[1] Related type-difficulties: *Section* II. E, H. *Section* IV. A, D. *Section* V. H, K. *Section* VI. C, D.

demand direct action by the teacher. Expulsion from the room is often necessary to allow the pupil to calm down. A friendly reproof is enough to quell the disturbance if the motive is desire to attract attention. Otherwise, and as a general rule, it is best simply to bring the discussion back to the point or, in an emergency, to introduce a written exercise or test.

Class officers or committee chairmen who are temporarily responsible for certain tasks help to bring about a spirit of team work that prevents open hostilities between unfriendly pupils. Virtually all the teacher's direct dealings with unfriendly pupils should be conducted in private conference. When a disturbance arises in class, peremptory commands are often necessary to restore order.

Friendliness as a basis, and peremptory commands when the disturbance is caused, are essential in restoring harmony. If the teacher's attitude is habitually friendly, disorder is less likely to occur. In following up cases of disorder due to personal animosities, the matter of discourtesy should receive first attention. The teacher may then serve as peacemaker by directing each pupil to find and report upon the other pupil's good points, or by some similar definite directions.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (V. I)

**1. How to smooth out personal dislikes among members of a class.**

By pointing out the good points of each to the other and explaining how much easier it is to get satisfaction from someone by making him like you than by opposing him. Emphasize the fact that to retain membership in the class each must at least *act* courteously to other members.

**2. How to make peace between a boy and girl, each of whom objects vigorously to whatever the other says.**

By the procedure described in No. 1; with perhaps greater stress on courtesy to ladies.

**3. How to teach pupils to lay aside prejudices of sex, religion, race, and the like, when such prejudices prevent coöperation with other members of the class.**

By attempting to find the causes for each type of prejudice, explaining these causes to the pupil, and suggesting the injurious effect of such prejudices not merely upon the class morale, but also upon the pupils' entire social outlook. By giving examples to illustrate the strong points in the other's race, religion, or sex which must be duly appreciated if one is not willing to be considered a snob.

**4. How to prevent expressions of snobbery on the part of the more wealthy pupils toward the less wealthy.**

By asking the wealthy pupil to describe the characteristics of less wealthy members of his own family; then pointing out similar characteristics in his less wealthy classmates. By teaching the social responsibilities which wealth confers, and the value of a democratic attitude to one who wishes to make friends. By systematically organizing class sentiment against snobbery in all forms.

**5. How to cultivate an interest in the point of view expressed by other pupils with radically different home environments.**

By conferring with such pupils privately in order to understand their point of view, then giving them the opportunity to explain and illustrate whatever you consider of interest and value to the class.

**6. How to establish a classroom atmosphere in which out-of-class frictions are laid on the table.**

By convincing demonstrations of friendliness and businesslike discussion of personal problems from the standpoint of their relation to class work. The "frictions" between pupils can usually be made to appear ridiculous, if the teacher understands the pupils concerned and applies his sense of humor.

## Type-Difficulties V. J[1]

### Sex References

**Summary statement of principles.** Appropriate sex allusions by pupils in a mixed class group are likely to cause embarrassment when the terms are unfamiliar to certain other pupils. The teacher's problem, therefore, consists in making the allusion clear to the less sophisticated pupils without subjecting them to ridicule. When possible, such explanation should be given privately. Otherwise the teacher may explain the allusion to the entire class in a perfectly natural manner.

Sex allusions designed to embarrass the teacher or other pupils of the opposite sex should receive the same treatment as other forms of discourtesy. The treatment of sex allusions in the regular text material should be carefully planned in advance with a view toward satisfying adolescent curiosity in the most natural and wholesome way. Where the pupil's attitude toward sex matters is perverted, the remedy lies in studying the pupil until a safe plan of procedure can be made and discussed with the principal or parents.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (V. J)

**1. How to discover an inscriber of indecent inscriptions on classroom desks.**

By interviewing pupils suspected of the practice about other matters, asking their help in eliminating that type of rowdyism. Class "property committees" are often useful when the pupils are young enough to take such appointments seriously as in junior high-school grades.

**2. How to "sublimate" the suggestive giggle that follows any mention of topics or terms which carry a sex connotation for the more sophisticated members of a class.**

[1] Related type-difficulties: *Section* II. A. *Section* IV. D. *Section* VI. E.

By refusing to let the matter drop until the term has been clearly explained and until the "giggle" gives place to a sober interpretation of the passage. In case the teacher lacks the assurance to undertake the explanation in class, the gigglers should be privately interviewed.

**3. How to reprove a boy who changes a statement in a true-false test in science so as to give it a highly suggestive meaning.**

By privately asking him to explain his reason for changing the statement and to apologize for his lack of respect. Inasmuch as the offense occurs in the science class, the teacher may well point out the fact that an interest in biological matters is to be encouraged when a pupil is old enough to discuss such matters seriously, as he should be. The distinction should be clearly drawn between the natural interest in sex and flippant references. The former should be encouraged when conditions permit the teacher to direct the interest toward safe and correct information.

**4. How to bring about an open discussion of the various sex allusions found in literature which pupils are apt to repress or to distort.**

By presenting the facts as objectively as possible when the allusion is important and the facts are not known. When the allusion in the literature is crude or suggestive of a flippant attitude toward sex, explain that such flippancy has been the rule in literature of a certain type. Reputable writers are now more serious in references to sex because they recognize the importance of self-control in mental as well as physical health.

**5. How to "counter" when a pupil seeks to embarrass the teacher by a direct question concerning sex matters.**

By a direct reply to the question, if such is in order, followed by a statement that the pupil's manner of asking the question is offensive. When such a procedure is not certain to produce the desired result, the pupil should be privately interviewed.

## Type-Difficulty V. K[1]

### Personal Peculiarities

**Summary statement of principles.** Personal peculiarities call forth sympathy or ridicule from other pupils, depending upon the self-assurance of the pupil concerned. The greater his self-assurance, the more likely he is to be ridiculed. The status of a peculiar pupil in the class often depends upon the first impression he creates. If the first impression is favorable, he may become a class pet; if unfavorable, he becomes the butt of class ridicule. On account of this tendency, the teacher may often save the individual much misery by tactfully priming the class in advance. This is best done by asking a few influential pupils to befriend the odd pupil and see that he gets a fair chance with the others. If, in addition, the teacher can demonstrate friendliness himself, preserve an even sense of humor and of justice, instruction in common courtesy will serve to avoid serious difficulty from peculiar pupils. It is, of course, essential that the pupil be led to an intelligent interest in the work, so that he may win due respect for his abilities.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (V. K)

**1. How to manage pupils with marked peculiarities in the most kindly and helpful way.**

By drawing the pupil out in private conversation and showing him the same degree of friendliness as the normal pupil. Help him to plan ways of coöperating with the class and of making friends with those who ridicule him. First efforts should seek to discover something he can do really well.

**2. How to prevent the less considerate members of a class from laughing at pupils with physical or mental peculiarities.**

By privately requesting apologies and publicly demanding courtesy, when the ways of showing courtesy have been taught.

[1] Related type-difficulties: *Section* IV. A, D, I. *Section* VI. C, F, G, H.

**3. How to make things easier for a brilliant and conscientious pupil who is a bad stutterer.**

By giving him private speech instruction to improve his breathing when this is possible; otherwise by allowing him to write the conclusions reached in study, except when he volunteers to talk.

**4. How to help a pupil who has an extremely harsh and unpleasant voice which other pupils make fun of, and successfully imitate.**

By giving him specific directions and practice in voice modulation, tone, and pitch. Tell him how his voice affects others and excuse him from talks that are likely to cause him embarrassment.

**5. How to change the attitude of a pupil who persists in the feeling that the class bears her ill-will when no such ill-will is apparent.**

By asking her to bring a list of the things other pupils have done or said to her which make her think she is disliked. Then go over this list with her to show that she is oversensitive and that the slights are either thoughtless or purely imaginary. Suggest definite ways in which she can increase her popularity by showing her good will toward the class.

**6. How to help a deaf pupil keep up with the class.**

By placing him on the front seat, repeating brief statements for his benefit when necessary, and basing as much of his instruction as possible upon written materials.

**7. How to set a pupil right who believes that the teacher bears a grudge against her, which is not the case.**

By repeating the procedure described in No. 5, and showing her as much friendliness as possible without danger of arousing jealousy or suspicion of unfairness.

## SECTION VI

## DIFFICULTIES ARISING FROM THE TEACHER'S PERSONALITY

### Summary Comment Concerning Type-Difficulties of This Section

*Request some friend of good judgment, preferably one who has had some teaching experience, to help you identify such of your own personal traits as need to be further developed, such as self-confidence, open-mindedness, or interest in pupils. When the traits have been identified, practice consistently upon different ways of expressing them in classroom situations until the opposite traits — such as timidity, narrow-mindedness, and lack of interest in pupils — have been sufficiently overcome.*

To overcome difficulties arising from the teacher's personal traits, it is first necessary to find out in what traits the teacher is deficient. Next, it is necessary to determine a number of specific activities that the teacher may systematically practice as a means of improving the traits. Finally, it is necessary to check progress toward overcoming the original difficulty in teaching.

Each of the above considerations suggests the value of expert supervision. A sympathetic and competent supervisor can help a capable and willing teacher to overcome almost any personality defect that is not caused by peculiarities over which the teacher himself has no control. For example, assume that the teacher encounters serious difficulties that are due to lack of self-confi-

dence. In this case the supervisor will often discover the cause more readily than the teacher, especially when the self-distrust is due to the teacher's unreasonably high standards or to an over-conscientious effort to produce results in too short a time. When the difficulties are traced to the lack of self-confidence, the supervisor should make a list, in conference with the teacher, of several specific situations or ways in which self-confidence may be expressed; such as by speaking in a loud tone of voice, by looking pupils, and other persons addressed, in the eye, by adopting an informal posture in the classroom and easy manners of walking about, by being deliberate and forceful in speech and giving the impression of reserve, by letting his mind dwell upon his own scholastic and social achievements rather than upon what he considers his failures, by telling his pupils about personal exploits when related to the work in hand, and by other means of developing self-confidence which the teacher has frequent opportunity to use. The supervisor should then check the teacher's progress by pointing out opportunities for the expression of self-confidence which the teacher overlooks. A month or so of such coöperative attack upon the problem is almost certain to make for improvement, and the procedure applies about equally well to the improvement of any personal trait. It is important, however, that no more than one trait should be practiced at a time.

But supervisors having both the time and the ability to render this kind of assistance are unfortunately hard to find. When no competent supervisor is available, the best substitute is a personal friend of good judgment and attractive personality whom the teacher meets very frequently. A friend of this type, whether or not a teacher, is often able to help a teacher work out a solution for these intimately personal problems to better advantage than a supervisor whom the teacher is not likely to meet

except in connection with school work. In making such an arrangement with a friend, the initiative must come from the teacher. It is not sufficient for the teacher to ask for help and rest content with a certain amount of friendly advice. A definite program of " things to be done " must be worked out in detail and followed systematically. Hence, it is more important for the friend to be mature and somewhat authoritative than for the friend to be intimate with the teacher concerned.

Each of the traits appearing in the present section respond to this sort of systematic practice. Self-confidence may be developed by practice in manners of speech, facial expression, bearing, in the manner of making decisions, in accepting responsibilities, and in reflecting upon one's successes rather than upon one's failures.

A sense of authority is developed by acquiring the specific abilities which combine to justify authority in any given field. Authority in teaching implies mastery of subject matter, both from the standpoint of scholarship and from the standpoint of its applications to actual life situations. Authority further implies effective use of English, promptness and efficiency in attending to the details of class management, and foreknowledge of difficulties to be met in any given type of class work. Authority of the right kind also implies the loyalty of the class group. Loyalty is developed by taking sympathetic and helpful interest in those pupils who are not likely to coöperate unless they do receive personal attention.

Friendliness is developed by making a sufficiently careful study of each pupil to discover specific ways in which he can be helped towards a more desirable position in the regard of the class, and then giving him this help. Friendliness, moreover, often involves accepting favors from pupils. To secure the pupil's personal interest, it is sometimes more important to let

him feel that he has conferred a favor than that he has received one.

" Righteous indignation " is an element of authority that is perhaps better expressed by " firmness." Pupils have a tendency to see how far they can go, if the teacher is inclined to tolerate trifling at all. Firmness is developed by practice in making clear to a class the distinction between liberty and license — rather in terms of specific situations than in terms of rules. No exceptions whatever should be made to the principle that the amount of individual freedom depends upon the individual's willingness and ability to coöperate with the group.

Interest in the pupils' personalities is developed by the systematic attempt to discover their likable qualities. Friendliness implies some degree of personal warmth which is often offset by the scientific scrutiny of a class as composed of so many specimens for analysis. It is none the less true that unless the teacher does study pupils objectively, he is unduly irritated by the undesirable traits of those pupils who most need his interest. A personal interview, in which the teacher conscientiously tries to find as many good points as possible in the pupil, is often sufficient to develop a genuine personal interest.

A sense of justice in dealing with individual pupils is difficult for some teachers to acquire because of the tendency to pigeonhole pupils on the basis of first impressions. A means of avoiding this tendency is to make no general statement whatever regarding individuals. Rating should be based wherever possible upon evidence of the pupil's success or failure with some particular type of work. Test scores often offer less reliable evidence than informal notes which record the pupil's habits and methods of study, his initiative as shown in various ways, his ability to use what he learns in other situations, and other incidental indications of abilities and interests. A sense of justice also involves

frequent reference to class sentiment. Pupils are quick to sense injustice, and the observant teacher learns much from the class reaction to the treatment accorded individuals.

The sense of humor which a class can appreciate is developed by taking time to talk casually with small groups out-of-class. By joining corridor gatherings of pupils during odd moments, the teacher sees the pupil in a state of mind that bears little or no relation to his classroom behavior. From such contacts the teacher can pick up much that can be used to good advantage in the classroom. Sense of humor means mutual understanding between one person and a given group of persons. Without this understanding a teacher may enjoy the reputation of being a wit and yet fail to secure the response from a class that follows the recognition of a sense of humor. The teacher should consequently utilize every means of becoming familiar with the out-of-class attitudes and interests of the pupils.

The teacher's interest in his subject is shared to best advantage in casual meetings with individual pupils. References to interesting topics may be entirely natural at such times and consequently often have greater force than they have in the class meeting. A list of topics which lend themselves to such informal discussion is useful to have on hand. Popular treatments of topics in books or magazine articles are also useful when individual pupils show sufficient interest in the discussion. The informal club meeting after school hours, with a more or less definite program of activities, provides an excellent occasion for the free expression of the teacher's interest in a subject. When membership in such clubs is entirely voluntary and when the teacher carefully avoids any attempt to prescribe the activities, the club is a useful means of organizing and increasing interest in a course.

## Type-Difficulty VI. A[1]

### Developing Self-Confidence

**Summary statement of principles.** The possibility of developing one's self-confidence depends upon the situations chosen for practice in expressing self-confidence. The general type of situation that most challenges the teacher's self-confidence is the evident unwillingness of a class to coöperate. This situation demands an effort to discover and eliminate whatever causes there may be for the antagonistic attitude. While the causes are being sought in the content and method of the course, the teacher should undertake to teach the class the particular activities which constitute coöperation. Do not regard the pupil's attitude as antagonistic without convincing evidence. Select one or two of the more influential pupils and tell them that you count on them to show the rest of the class how to develop teamwork. Use concrete instances to show the pupils how they can help to swing the rest of the class into line. Show the class as a whole how time and trouble may be saved by working with the group toward the common objective of the course or unit.

Utilize the various devices for holding attention, such as gesture, modulation of voice, illustration and anecdote, variety of procedure, and questioning, for the immediate purpose of developing confidence in your ability to hold attention. Take sufficient pains to plan the procedure in a given class situation, then apply it without apology or hesitation. Insist on courteous and orderly behavior by courteously requesting pupils to explain their motives for discourtesy and keeping after them until they admit the fault and show a respectful attitude. A teacher is

[1] Related type-difficulties: *Section* I. A. *Section* IV. A, B, D, I. *Section* V. H. *Section* VI. B, C, E.

often cured of unjustified timidity when he has once made a disorderly pupil submit to authority without any loss of temper or dignity. Clowns and humorists require a somewhat similar treatment. The test of self-confidence here consists in meeting such pupils on their own terms. Firmness alone is not sufficient. The teacher must not merely refuse to allow the class work to be burlesqued, but must also appreciate whatever is humorous and thereby avoid antagonism. Self-confidence is developed by practice in keeping authority in reserve and employing friendly suggestion wherever possible.

Success in maintaining a confident attitude before the class is generally dependent upon a teacher's sincerity in personal contacts with individual pupils. This sincerity should in turn be based upon a genuine interest in pupils' personalities. It is usually far easier to express self-confidence in private conference than before a class. The private conference thus affords both an opportunity to practice the expression of self-confidence and to secure the respect of individual pupils that alone justifies the feeling of self-confidence. Diffidence, resulting from the teacher's inadequate command of subject matter, should pass when the teacher has planned and carried out such study as will make him competent to teach the subject.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (VI. A)

**1. How to keep fear of class disorder from preventing proper attention to teaching.**

By giving such attention in advance to the planning of pupils' work that each pupil can proceed with his work to some extent independently of the teacher's direction. Tendencies toward disorder may then be stopped by asking the pupils concerned to explain their difficulties. Apprehension of class disorder is to be expected if the entire period is used for oral recitations that have little meaning for a significant number of pupils. Busy pupils tend to be orderly.

**2. How to shorten the period of stage-fright when confronting a new class.**

By devoting the period to study as soon as the purpose of the study has been clearly presented. Plan directions in advance so that group directions may be given without undue embarrassment. Take advantage of every opportunity out of class to speak to groups of people without addressing any one in particular. Take advantage of opportunities in class to speak to individuals until the nervousness has passed.

**3. How to appear self-confident as a means of becoming self-confident.**

By standing erect, speaking in a firm tone of voice, appearing cheerful, and looking at the pupils addressed.

**4. How to look cheerful in conducting the class when the teacher's mental state is one of deep seriousness.**

The "deep seriousness" implies preoccupation with what the teacher is about to say or do. This suggests that the teacher is attempting to "carry the class on his back" by talking to the class as a whole during most of the period. The escape from this situation is to set the class to work. Whatever instruction the teacher finds necessary may then be directed at specific difficulties the pupil has met. It is less difficult to look cheerful under these conditions than when the teacher is attempting the almost impossible task of holding class attention throughout the period by a monologue or series of questions upon work which only a few pupils may have studied out of class and are able to discuss intelligently.

**5. How to prevent ideas that are perfectly clear in the teacher's mind before class from fading out when the class begins.**

By preparing notes, not merely of the points to be presented, but also of the specific illustrations to be used. Examples and illustrations in notes are usually more suggestive than abstract terms. A casual glance at the illustration will usually recall the ideas which the teacher wishes to present.

**6. How to acquire the ability to out-bluff a pupil in matters of discipline, -- as when a pupil is told to leave the room and he temporarily refuses to go.**

No general rule can be given. If the antagonism arises through no fault of the teacher's, a safe procedure is to avoid raising any issue before the class which the teacher is not sure he can meet. Self-confidence is not developed by failures. Cases of outright insubordination are usually attributable to the teacher's failure to diagnose the pupil's tendencies and to find a satisfactory method of dealing with him. Insubordination is rare in a class which has been convinced that the course is worth while. Insubordination that does not yield to proper treatment constitutes a problem case demanding intensive study. The safe course is to postpone action until the teacher has time to plan it, thus keeping the pupil in suspense.

**7. How to practice developing an idea in class without reference to notes when the first attempt to get along without the notes is accompanied by a feeling of panic.**

By writing the main points of the notes on the blackboard as an aid both to the class and to the teacher. The teacher may then follow the notes without "losing" the class, and the outline serves as a summary of conclusions reached at the close of the period.

## Type-Difficulty VI. B [1]

### Expressing Authority

**Summary statement of principles.** To exercise authority is to develop leadership. Leadership implies not merely the privilege of directing others, but also proficiency in the various activities that the leader directs. The right of a teacher to exercise authority is perhaps most evident in his command of subject matter. Particularly in any assignment of new work, the teacher should give sufficient evidence of knowing both the difficulties to be expected and the efficient methods of meeting the difficulties.

[1] Related type-difficulties: *Section* I. A, B, D. *Section* III. A, C, D, E. *Section* IV. A, B, D, I. *Section* V. B, C, F, H, K. *Section* VI. A, C, F.

The teacher's command of class situations depends very considerably upon his use of English. Clear and emphatic speech is an effective means of control, and therefore an evidence of good leadership. Other important factors are promptness in beginning work, directness in questioning, and skill in suggesting methods whereby pupils can work their way out of difficulties.

To obtain cheerful recognition of leadership, the teacher should take pains to delegate authority to deserving pupils who may organize class sentiment in favor of the teacher. Leadership is developed by planning specific ways of securing the loyalty of individual pupils who at first are indifferent or unfriendly. When the plans are applied, their effects should be noted for future reference. The teacher should similarly practice the many ways of expressing authority, both in holding the attention of the group and in directing the efforts of individual pupils. Courtesy is an essential factor in the teacher's classroom authority, and insistence upon the courteous behavior of pupils is the natural means of emphasizing the teacher's own courtesy.

In dealing with pupils who tend to resist authority, — namely, the overzealous, the bright but lazy, the dishonest, and the clownish types — what has been said above concerning the necessity of experiment applies with particular force. It is only by experiment that a teacher can discover specific ways of expressing authority that each type of pupil will respect. The personal traits that contribute to the teacher's authority over a class are self-confidence in winning the respect of indifferent pupils, friendliness combined with reserve, and a clear sense of justice.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (VI. B)

**1. How to " take command " of a class at the first meeting.**

By showing interest in pupils as individuals, by taking definite positions and making clear the reasons for taking them, and by businesslike attention

to the details of class management. Authority implies ability to meet emergencies; hence, the teacher's resourcefulness in drawing upon his experience for effective illustrations tends to increase respect for his authority in the classroom. "Textbook teaching" can seldom win this kind of respect.

**2. What traits are best calculated to win pupils' respect?**

Courtesy, energy, firmness, self-confidence, cheerfulness, and resourcefulness — particularly as expressed in situations out of class when pupils are present.

**3. How may the beginning teacher best establish his authority at the outset?**

By cultivating influential pupils individually and winning their regard, being careful to avoid undue familiarity or loss of dignity. Work out a code of behavior with the class to be used in regulating the amount of freedom allowed. Show the class how far they can go when they wish to find out, but avoid any sort of antagonism by maintaining a strictly impersonal attitude.

**4. How to determine how much authority to exercise in the first few weeks of a course.**

By carefully noting the pupils' willingness to follow directions. When obedience is reluctant, exercise no more authority than necessary, but rather give attention to the reasonableness and importance of the requirements and also to the manner in which the requirements are presented to the class. Develop coöperation by demonstrating the importance of the class work until pupils voluntarily ask for directions.

## Type-Difficulty VI. C[1]

### Developing Friendliness

**Summary statement of principles.** In developing friendliness toward pupils, the teacher must be mentally free to consider the individual pupil as well as the class as a whole. He must not be

[1] Related type-difficulties: *Section* I. B, C, I. *Section* II. G, K. *Section* IV. A, B, D, I. *Section* V. A, G, I, K. *Section* VI. A, B, D, F, G, H.

too much preoccupied with subject matter. Hence, careful organization of the subject matter in advance of teaching increases the teacher's assurance and cheerfulness before the class and thus makes for the expression of friendliness. Without the assurance that results from having the necessary details and organization of subject matter well in mind, the teacher is unable to adapt the material to the needs of the class. Some advance planning is especially helpful in emphasizing material needed by a few pupils only. A friendly attitude toward slow pupils is more convincing when they see that they have received particular consideration. Oral exercises and direction of individual work during the period are activities affording perhaps the best opportunities for the expression of friendliness.

Friendliness is likewise developed by practice in the specific activities that hold attention and develop a coöperative spirit, — such as appropriate illustration, forming study groups of pupils with similar difficulties and interests, requesting certain pupils to help others, encouraging the collection of data from outside sources which bear upon the work, and incidental, good-humored remarks. Encouragement of courteous criticism produces an atmosphere of friendly give-and-take.

Pupils of special types require special treatment. Each type probably owes its peculiarity to a set of circumstances that must be discovered before the basis for friendly contacts can be established. The more eccentric the pupil is considered to be by his classmates, the greater is his loneliness and consequent desire to make friends. His response is therefore likely to be cordial when once the proper approach has been discovered by experiment with different methods of approaching him.

The teacher's traits involved in the expression of friendliness are self-assurance, sufficient exercise of authority to win respect, sufficient firmness to avoid being imposed upon, a genuine interest

in pupils' personalities, a sense of fairness applied to pupils toward whom prejudice is formed by first impressions, a sense of humor adapted to the level of the given class, and the ability to share an interest in the subject by relating it to the interest of the pupils.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (VI. C)

**1. How to develop friendliness with pupils.**

By discovering and sharing their interests, by persistent good humor, and by securing respect through maintenance of a proper degree of authority and a willingness to take pains for the pupils' benefit. In private conversation ask questions about things that interest the pupil instead of talking about your own interests.

**2. How to be friendly without loss of dignity.**

By asking other teachers to call your attention to undignified mannerisms, which may be quite unconscious, and practice avoiding these until undignified habits of speech and conduct are broken. The teacher, as a rule, should be noticeably more reserved in the classroom than outside of class.

**3. How to refer to personal experience in teaching without being too intimate or too confidential.**

By avoiding any such references except when they are clearly appropriate to the work (if in class) or to the topic under discussion. Whenever describing personal experiences, remind yourself of the fact that pupils will probably misquote you to other pupils and parents. Reserve is necessary to escape ridicule, if for no other reason.

**4. How to express real interest in individual pupils without appearing to discriminate.**

By confining such expressions to private conferences with pupils whom you believe need someone to confide in. Interest should be expressed impartially. Confidential talks should be concerned directly with the pupil's problems and should avoid much analysis of the pupil himself in order to subordinate the personal element.

**5. To what extent should invitations from pupils' parents be accepted?**

Invitations may be freely accepted whenever the parents' motives are to become better acquainted with the teacher and with the details of the pupil's work. They should not ordinarily be accepted from parents whom the teacher suspects of seeking to place him under obligation to the pupil.

**6. How to be friendly during the first few weeks without encouraging pupils to take liberties.**

By confining friendliness to contacts with pupils in connection with the regular class work. There is no reason why helpfulness should encourage pupils to take liberties, provided the teacher himself sincerely believes the work to be important and shows disapproval whenever the pupil presumes on the teacher's friendliness to neglect his work.

**7. How to meet the situation when a pupil is aware of the teacher's dislike.**

By studying the pupil's good points until the dislike has been overcome, taking pains to show the lack of any prejudice, and encouraging the pupil to express his grievances in private conference.

## Type-Difficulty VI. D [1]

### Expressing "Righteous Indignation"

**Summary statement of principles.** Inexperienced teachers frequently lack the maturity that helps to command the immediate respect of a class. Mere silence on the part of an older teacher is often a sufficiently pointed rebuke. The young teacher is often tempted to scold pupils as a means of expressing displeasure, and scolding under any circumstances is more likely to lose respect than to win it. Sarcasm is only slightly more effective. Disapproval, clearly expressed, but expressed impersonally and with concrete suggestions for the pupil to follow, is usually best.

[1] Related type-difficulties: *Section* IV. A, D, I. *Section* V. C, D, F, H, I, K. *Section* VI. A, C.

The coöperative classroom atmosphere is developed by administering most reprimands privately. Any expression of anger is an admission of the teacher's inability to meet the situation efficiently. Pupils can seldom coöperate with teachers who adopt personal attitudes toward classroom issues. Coöperation is easy with teachers who are consistently impersonal and who are also sincere. Courtesy is a necessary factor in the impersonal attitude and is effective in preventing deliberate disorder. When both teacher and pupil are working toward the same ends which both consider worth while, personal antagonisms are reduced to a minimum.

Self-confidence and friendliness are difficult to maintain when certain pupils deliberately attempt to exasperate the teacher. While different pupils require different treatment, it is a safe rule to disguise any anger that may be felt. When a teacher really is angry, any action should be deferred, whenever possible, until the teacher has regained his composure. Practice in discovering effective ways to meet the antagonism of different types of pupils is the best means of developing self-control. The efficient teacher avoids anger by studying the class in somewhat the same way that the scientist studies specimens in the laboratory. He is interested in learning the facts which will indicate methods of solving difficulties. Anger at the difficulties themselves would be as childish as it would be useless in meeting the difficulties.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (VI. D)

**1. How to control justifiable anger at rebellious pupils.**

Prevent anger by studying the pupils concerned in the attempt to find motives for their behavior. Control anger by postponing action wherever possible. When the situation demands immediate action, make a practice of doing and saying nothing which you would not do or say if the principal and the pupils' parents were present.

**2. How to prevent loss of temper from leading the teacher into threats that he cannot carry out.**

By making it a rule to assign no penalties on the spur of the moment. To keep the pupil in suspense invariably adds to the force of the reprimand or punishment.

**3. How to acquire the necessary poise to see problems of discipline in proper perspective.**

By systematically analyzing the situation. Describe it on paper, list all probable or possible causes, select those you think most significant, and list effective methods of removing each cause. Then ask some other competent teacher to criticize your analysis.

## Type-Difficulty VI. E[1]

### Expressing Interest in Pupils' Personalities

**Summary statement of principles.** Interest in pupils' personalities is clearly involved in all the activities of classroom teaching. Success in high-school teaching is seldom achieved unless pupils are aware of the teacher's interest in them as individuals. Pupils usually are aware of the teacher's interest when the teacher *is* interested. The difficulty is accordingly rather a matter of developing the interest than of expressing it. In every contact with individual pupils, whatever interest or indifference the teacher feels is likely to be observed by the pupil.

Interest in pupils largely affects the selection and presentation of subject matter in relation to the different needs and interests of individuals. Since close relation of work to individual needs can seldom be made in advance of teaching, the class period should be used primarily for the study of pupils at work in order to determine their needs as resulting from their experiences to which the

[1] Related type-difficulties: *Section* I. A, B, C, F, G, K. *Section* II. G, H. *Section* IV. A, B, C, D. *Section* V. B, C, D, F, G, H, I, K. *Section* VI. C, H.

given subject is related. Interest in the pupil is expressed by the teacher's recognition of his life experience in such matters as choice of illustrations, introduction of new material, assignment of collateral reading, and efforts to secure his genuine appreciation of the subject. Observation of individuals at work not merely helps in directing individual study efficiently, but also develops an interest in the pupil as a person. Scientific interest in the pupil as the unit of instruction leads to greater interest in the pupil as an individual. Oral and written exercises may be specifically adapted to this purpose of discovering significant elements in pupils' personalities.

Attention to the technique of developing coöperation, arousing interest, increasing pupils' initiative, and teaching courtesy, leads also to interest in pupils' personalities. The difficulties that confront the teacher in each of these activities can usually be traced to individual pupils. Objective study of these pupils is necessary in finding successful methods of approach. Personal interest follows naturally when the pupils' coöperation has been secured.

The teacher's outward friendliness and efforts to share his own interest in the pupil are essential factors in developing an interest in pupils' personalities.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (VI. E)

**1. How to overcome prejudices against pupils of a sullen and vindictive temperament when such temperaments are clearly the result of home conditions which the school should help to relieve.**

The prejudice should pass if the situation is honestly attacked. Secure the coöperation of principal, other teachers, and social service workers, if necessary. Show the pupil your sympathy, if he needs it, and do whatever can be done to establish a friendly relationship in terms of classwork or outside interests. If such a relationship can be established, encourage him to

seek your advice in meeting his home problems. It is obviously more to the pupil's advantage to overcome his sullenness than to teach him the subject matter. Any departures from the regular work of the class are therefore justified in his case.

**2. How to prevent preoccupation with the problems of class management from interfering with a natural interest in individual pupils.**

By organizing work, so far as possible, on an individual basis and devoting the major part of the period to study. Class-management is then largely reduced to the direction of individuals at work, which encourages the expression of "natural interest."

**3. How to get to know individual pupils on a basis which has as little as possible to do with their school work.**

Through club activities, casual chats, and by conferring with other teachers. Pupils' written replies to questionnaires, papers on their hobbies and ambitions, and individual conferences are useful. It is good policy to seek out those pupils whose attitudes are peculiar, — invite them to confer, and cultivate their friendship.

**4. How to discover qualities in individual pupils which can be utilized in making the class work more appealing to them.**

By consulting other teachers who know the pupils better, by conversations with the pupils' intimate friends, by private interviews to draw out the pupil on the subject of his hobbies, and by such formal methods as by having each member of the class write answers to a list of questions concerning his special interests in reading, recreation, friends, vocations, and other significant topics.

## Type-Difficulty VI. F [1]

### Developing a Sense of Justice

**Summary statement of principles.** The activities in which the teacher's sense of justice is most necessary are largely concerned with the keeping of pupil records. It is only by recording close

[1] Related type-difficulties: *Section* I. C, D, J. *Section* II. H. *Section* III. K, L, M. *Section* IV. A, C, I, J. *Section* V. G, K. *Section* VI. C, E.

observations of individual pupils at work that the extent and character of pupils' learning can be evaluated justly.

In presenting subject matter, the record should show the results of pretests to determine what the pupil already knows about the work to be undertaken before the work is presented and assigned. All assignments of work should be guided by records of knowledge of the pupils' present command of the subject matter, attitudes toward it, and abilities to study it independently. While much of such information may be collected by properly devised tests, most of it is gathered by direct observation of individual pupils at work. Clearness in explanation should, in justice to pupils, be checked by tests immediately following each explanation. The teacher's guess as to the clearness of his own explanations is almost entirely unreliable.

In directing learning activities in the classroom the work should be so organized that pupils may work at individual rates of speed. Justice to pupils in this case demands the construction of written exercises, guide sheets, or other materials whereby pupils may be helpfully guided in study without the strain or boredom that results from being forced to keep pace with the rest of the class in developing a line of thought.

In the mechanics of class management, justice implies the analysis of individual methods of study to the end that study conditions are as helpful as possible. Pupils should be taught how to listen, how to coöperate, and how to overcome specific difficulties in study whenever the needs for such instruction appears. Otherwise, pupils who have learned these routines have a decided advantage.

In promoting class coöperation and in relations with individual pupils, the teacher should discover and record the individual characteristics that help to explain the nature of individual tendencies, whether favorable or unfavorable. Such character-

istics best appear in the pupils' activities out of class when he is less on his guard. Conferences with other teachers and observation of pupils out of class often reveal important characteristics that do not appear in any one classroom. Cases of dishonesty may be handled justly only when the teacher has recorded both the facts of the case and whatever other evidence helps to suggest the pupil's motives.

This intimate record of individual pupils' learning activities is entirely possible for any teacher to keep. To keep it, however, requires more time and more interest in the analytic study of teaching than most teachers possess. The desire to develop justice as a character trait is one of several motives that may justify the labor involved. There is probably no more important factor in teaching than case study of the sort above suggested, which bases all procedure on as many pertinent facts as can be made available. When the labor of an adequate individual record appears too great, the record may be confined to the pupils who are most in need of special attention.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (VI. F)

**1. How to prevent likes and dislikes from influencing estimates of pupils' abilities.**

By systematic collection of objective evidence concerning these abilities through tests, consultation with other teachers, observation of individual pupils' study habits, and personal interviews.

**2. How to refrain from drawing conclusions on superficial evidence in matters which concern the achievements and motives of pupils.**

By collecting as much additional evidence as possible, submitting the evidence and your interpretation of it to some competent critic, and revising conclusions in the light of suggestions received.

**3. How to collect objective evidence for use in dealing with backward and disorderly pupils.**

As already suggested. Supplement the obvious facts concerning the pupils by recorded observations, personal interviews, and some attempt to secure correct information about home conditions and other significant factors. See Part I, Chapter Seven.

## Type-Difficulty VI. G[1]

### Developing a Sense of Humor

**Summary statement of principles.** A sense of humor, as the term is generally used, means little more than congeniality. Few professional humorists can be found whom everyone considers funny. If this is true of clowns, it is obviously true of ordinary people. When we say that Mr. A has a sense of humor, we mean that we happen to share his attitudes toward the relatively unimportant incidents of daily life.

As applied to the teacher's personality, this means that the term " sense of humor " is so broad that a given teacher can do little to develop the trait if he happens to be placed among uncongenial people. To develop one's sense of humor it is not enough to be amused oneself, one must also share the amusement with others. If opinions differ as to what is amusing, the teacher gets no credit for the amusement he feels. Positive prescriptions for improving one's sense of humor can therefore go no farther than to recommend that the teacher conform in every way he can to the modes of thought and behavior that the given group or class finds agreeable, and this without losing his own individuality.

Negative prescriptions may be far more definitely suggested. In directing learning activities, do not volunteer humorous

[1] Related type-difficulties: *Section* I. G. *Section* II. G. *Section* III. M. *Section* IV. A, B, I. *Section* V. K. *Section* VI. C, H.

remarks until the class shows its appreciation of the situation. Avoid all personal references and "kidding" at which pupils might take offense. In oral recitations and exercises be careful to place on pupils' remarks no humorous interpretations that might possibly be regarded as an attempt to ridicule. In writing comments on pupils' papers and in all personal conferences, be strictly literal and commonplace until you feel certain that good-natured jests will be understood and appreciated.

In attempting to hold pupils' attention and to develop a coöperative spirit, there is often more to be lost by making pleasantries than there is to be gained. Good humor makes for coöperation, but expressions of good humor must be obvious. The teacher whose difficulty consists in his failure to register a sense of humor had better play safe, striving for clearness in organization of the work rather than for cleverness in by-play. Clever speeches that pupils do not entirely grasp give them the suspicion that they are being made fun of. By the same token the personal peculiarities of pupils should be ignored or should be privately discussed on a friendly basis. No teacher is likely to work reforms by ridicule unless he is sure of his ability to carry the class with him.

In more positive terms, employ any neat, humorous turn that you feel sure the audience will "get," — in choosing illustrations, in private remarks to individuals, in checking disorder, in comments on written papers, and on any occasion where a humorous turn will improve the class atmosphere.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (VI. G)

**1. How to adapt a somewhat irregular sense of humor to classroom uses, — *i.e.*, how to express the humor of situations which is felt but not shared with pupils.**

By carefully avoiding any such expression, as already suggested, until the teacher is sufficiently acquainted with a class to be sure of a favorable

reaction in advance. Comments of a humorous sort may be made more safely to individual pupils.

**2. What use should be made of humorous anecdotes as means of breaking the ice? When is a funny story justified merely because it is funny?**

Such use of humorous anecdotes is legitimate when the anecdote is pertinent to some phase of the class work, when it is not too involved to be clearly understood by all pupils, and when it is effectively told. The story need not be related to the class work if the point is sufficiently appropriate to the occasion and if it produces a reaction which makes the class more inclined to work or better disposed toward the teacher.

**3. To what extent does a teacher have to be consistent in his out-of-class remarks with his classroom remarks?**

In discussing class work casually with pupils out of class, the teacher should be as consistent with his classroom attitude as he can be without appearing to preach. In other words, he should never seem to depreciate his own teaching and should likewise avoid bookishness and "shop talk" in natural conversation with pupils.

**4. How to relieve monotony by humorous remarks.**

By watching for occasions during the period when, by exaggeration, ludicrous comparison of two points of view, or telling of an appropriate joke, the atmosphere may be relieved by a good-natured laugh. One or two *general* laughs from a class do much for class morale. Much the same effect may be gained if the teacher cultivates a friendly chuckle. The solemn face and serious tone of voice often render a period oppressive.

**5. How to collect humorous anecdotes for use in teaching.**

By reading humorous publications a few minutes each month and recording jokes that are likely to appeal to pupils and to have some relation to topics arising in the class.

## Type-Difficulty VI. H[1]

### Sharing Interest in the Subject

**Summary statement of principles.** Many teachers find it difficult to share personal interest in a subject with pupils. The difficulty is often due to the necessity of meeting pupils in groups and to the teacher's lack of skill in selecting illustrations that appeal to young pupils. Recent college graduates often possess a genuine literary appreciation which they cannot transmit to high-school classes. In general, the remedy is systematic practice in the various teaching activities that combine to produce clearness of understanding. Concrete illustrations of the values of the subject as applied to familiar situations are essential in bringing about clear understandings. It is thus sometimes easier for teachers to share their interests in the subject with pupils *out of class*, as in voluntary clubs and casual meetings, than in the regular work of the classroom.

In the classroom presentation of subject matter, the teacher should give particular attention to coherence of ideas as a means of securing clearness. Unrelated ideas are not merely useless in themselves, but also cause general confusion. Board outlines, mimeographed guide sheets, and frequent summaries make for coherence. Collateral reading may be used to bring in the teacher's personal interests that are related to the work in hand. References to be read should be arranged in proper sequence and followed by short descriptive comments wherever necessary to show how they apply to the classwork. Interests are likewise shared by the frequent use of examples in place of rules. Generally speaking, the abstract principle should not be stated until its significance has been felt in a series of definite and appropriate

[1] Related type-difficulties: *Section* I. E, F, G, J, K. *Section* IV. B, C. *Section* V. A, H, K. *Section* VI. C.

illustrations. Clearness of explanation, achieved by any means that the teacher can invent, is the quality that does most to render interest contagious.

In bringing about class coöperation, the teacher should practice the use of devices that tend to stimulate pupil initiative. The more responsibility the individual bears in the planning of his work, the more susceptible he is to the contagion of the teacher's interests. Hence, stimulating suggestions that the pupil follows up on his own initiative are a fruitful source of interest.

Many pupils fail to catch the teacher's enthusiasm for a subject on account of their timidity. Anxiety concerning class standing often displaces genuine interest in the subjects. Appeal to interest should therefore ordinarily precede attempts to increase the amount and quality of production. A good opportunity for the sharing of interest is consequently the classroom conference with individual pupils concerning their methods of study. Pupils who seek to burlesque the teacher's appreciative comments on serious phases of the work are a useful group to practice upon. In all group explanations, if the teacher plans his remarks with reference to the habitual scoffers, the effect on the rest of the class is usually more impressive than when the presentation is addressed primarily to the more responsive pupils.

Friendliness in all pupil contacts does much to facilitate transfer of interest in subject matter. In the casual, private chat with individual pupils the teacher may discuss matters of real interest to pupils and then relate these matters directly or indirectly to interesting, popular phases of the subject — *e.g.*, short stories, plays, and curiosities involving the general field of subject matter.

SPECIFIC DIFFICULTIES AND SOLUTIONS REPORTED (VI. H)

**1. How to share one's interest in the subject with pupils during out-of-school contacts.**

By careful preparation of club programs wherein striking features of the subject are presented by the aid of lantern, charts, objects, pictures, and board work; by casual suggestion and brief description of appropriate readings, experiments, and stories.

**2. How to talk up the subject out of class without seeming "preachy."**

By letting pupils do the talking and confining one's remarks about the subject to brief and clear suggestions made incidentally. Suggest ways in which pupils may *play* with the subject and arouse curiosity regarding the life applications to be made.

**3. How to encourage pupils to read popular treatments of the subject which may react favorably upon their interest in the course.**

By posting lists of readings considered certain to appeal under some such title as "Exciting books that are worth while," by obtaining suggestions from the abundant literature concerned with devices to encourage reading and by showing sufficient personal interest in the pupil's appreciation of the reading to stimulate his interest. In the latter connection, it is well, in presenting a list of readings, to suggest that pupils read them for the purpose of finding out which should be starred so that other pupils can benefit by the reader's judgment. The teacher himself should read things that pupils read, or things that pupils would enjoy; for example, magazines like *Popular Mechanics, Radio Monthly, The Western Magazine,* and other publications which present certain phases of the given subject in ways that are certain to attract pupils more strongly than the classroom presentation.

# APPENDICES

# APPENDIX A

## Type Analysis of Teaching Activities[1]

**A. Planning.**

1. Selecting activities to be planned:
   - *a.* Selecting objectives
   - *b.* Planning selection and organization of subject matter
   - *c.* Planning methods of developing interests
   - *d.* Planning methods of instruction
   - *e.* Planning methods of assigning work
   - *f.* Planning methods of providing sufficient opportunity for pupils' activities
   - *g.* Planning facilities for individual study
   - *h.* Planning methods of evaluating pupils' needs, abilities, and achievements
   - *i.* Planning methods of developing teachers' personal traits
2. Finding adequate time for planning
3. Finding sufficient methods of planning (*e.g.*, working out methods, obtaining methods from others)
4. Writing and recording plans (*e.g.*, outlining plans, noting central points)
5. Evaluating and revising plans (*e.g.*, correcting plans after use, adjusting plans to results of tests)
6. Filing and preserving plans
7. Utilizing plans (*e.g.*, referring to plans while teaching)

**B. Setting up objectives.**

1. Defining general objectives for the grade or subject (selecting appropriate aims of education)

[1] Quoted from a tentative list of type-activities involved in classroom teaching, prepared in connection with the Commonwealth Fund Study of Teacher Training Curricula directed by W. W. Charters of the University of Chicago and reproduced here by his permission.

2. Defining specific objectives in harmony with general objectives (selecting desired outcomes for the lesson or unit with reference to major objectives)
3. Presenting, explaining, and illustrating objectives to pupils (*e.g.*, discussing plans with teachers, getting pupils to adopt teachers' purposes)
4. Evaluating objectives (*e.g.*, deciding relative importance of specific objectives by consulting experts, by classroom experiments)
5. Utilizing objectives (*e.g.*, referring to objectives in selecting subject matter, in choosing methods, in planning procedures)

C. **Selecting and organizing subject matter** (subject matter includes information, pupil experiences, ideals, attitudes, skills, and learning activities)

1. Securing adequate command of subject matter to be taught (*e.g.*, preparing lessons, reading up on subject, securing adequate background)
2. Taking account of specific objectives (*e.g.*, selecting materials with reference to objectives)
3. Taking account of pupils' interest, abilities, and needs:
   *a.* Selecting subject matter with reference to pupils' interests (*e.g.*, introducing discussions of school events, pupils' hobbies, topics suggested by pupils)
   *b.* Selecting subject matter with reference to pupils' abilities (*e.g.*, providing practice in skills needing development, recognizing individual abilities in selecting collateral reading)
   *c.* Selecting subject matter with reference to pupils' needs (*e.g.*, providing material useful to individuals concerned)
4. Selecting proper materials for study (*e.g.*, selecting self-teaching material, listing items for pupils to learn)
5. Adapting materials to time limit (*e.g.*, selecting material on the basis of time available)
6. Determining difficulty of materials (*e.g.*, refraining from the use of unfamiliar terms, determining the difficulty of each unit)
7. Arranging sequence of units (*e.g.*, arranging materials in proper teaching order)
8. Organizing and recording materials for class use (*e.g.*, outlining, constructing units, making syllabi)

9. Evaluating organized material (*e.g.*, noting merits and defects of materials as organized)
10. Finding adequate time for selection and organization of materials.

D. **Developing interests.**

1. Determining pupils' interests (*e.g.*, finding pupils' likes and dislikes)
2. Suggesting new interests (*e.g.*, exposing pupils to good magazines, encouraging optional work, providing opportunity for self-expression)
3. Emphasizing uses and values of class work (*e.g.*, showing benefits, applications, practical uses)
4. Using interesting methods of instruction (*e.g.*, methods to catch and hold interest and attention)

E. **Assigning work.**

1. Selecting group assignments (*e.g.*, planning, making, presenting assignments)
2. Presenting directions for doing work (*e.g.*, rules for study, supplementary explanations, demonstrations)
3. Checking pupils' understanding of work to be done (*e.g.*, having pupils repeat assignments, copy assignments, begin to prepare them in class)
4. Adapting assignments to the abilities and needs of the class (*e.g.*, determining best time for making assignments, determining scope and difficulty of assignments)
5. Adapting assignments to the needs of individual pupils (*e.g.*, making assignments according to individual needs and abilities)
6. Following up assignments (*e.g.*, having corrections made, work completed, completed on time)

F. **Instructing.**

1. Selecting types of instruction adapted to needs of class (*e.g.*, adjusting type of instruction to materials, abilities, and objectives)
2. Following up pupils' responses (*e.g.*, developing topics, correcting statements, answering questions)
3. Showing relationships in presentation of materials (*e.g.*, relationships between subject and life, between parts of course, between different subjects)

4. Selecting points for special emphasis (*e.g.*, items in day's work, topics, principles, problems)
5. Presenting supplementary material (supplying background, developing topics in sufficient detail)
6. Selecting effective illustrations (*e.g.*, anecdotes, diagrams, models, pictures, specimens)
7. Presenting learning exercises and problems (*e.g.*, formulating questions, introducing problems, presenting drill exercises)
8. Indicating pupils' difficulties and errors (*e.g.*, showing written work to be incomplete, selecting weak points for review)
9. Suggesting methods of overcoming difficulties (*e.g.*, explaining solutions, suggesting remedial work, deciding when to offer suggestions)
10. Utilizing pupils' contributions from reading and experience (*e.g.*, using pupils' questions, discussing projects undertaken by pupils)
11. Demonstrating skills and learning procedures (*e.g.*, working out problems on board, explaining each step in the solution)
12. Formulating conclusions, solutions, and summaries (*e.g.*, carrying discussion to definite conclusions, reaching solutions, summarizing work covered)
13. Economizing time (*e.g.*, preventing loss of time, omitting unnecessary work, adjusting procedures to time available)
14. Conducting reviews (*e.g.*, preparing review questions, reviewing day's work, the unit, the course)

G. **Providing sufficient opportunity for pupils' activities.**

1. Avoiding unnecessary participation by teacher in class work (*e.g.*, restricting teacher participation to the minimum)
2. Distributing opportunities among individual pupils (*e.g.*, distributing questions evenly, encouraging slow pupils)
3. Allowing pupils to assume adequate responsibility (*e.g.*, making pupils responsible for preparation of work, for conduct of class activities, for criticism of pupils' contributions)

H. **Providing facilities for individual study.**

1. Providing necessary time and assistance (*e.g.*, conducting supervised study periods, holding private conferences, allowing time for individual help in class)
2. Providing necessary materials (*e.g.*, blackboard, charts, drill cards, maps, models)

**I. Investigating and evaluating pupils' needs, abilities, and achievements.**

1. Setting up standards of achievement (*e.g.*, determining basis for marks, setting requirements for pupils to meet)
2. Devising and selecting tests (*e.g.*, constructing [new type] tests, making out examination questions)
3. Inspecting pupils' work and methods of study (*e.g.*, seeing that work is neat, checking efficiency of study methods)
4. Administering tests (*e.g.*, determining time for testing, methods of conducting tests)
5. Recording results of tests (*e.g.*, making record of pupils' marks, marking tests and papers)
6. Diagnosing pupils' difficulties and needs (*e.g.*, finding causes for pupils' test results, locating special needs of individual pupils)
7. Following up diagnosis (*e.g.*, indicating means of improvement, commending good work, pointing out errors)

**J. Exhibiting useful teaching traits.**

1. Expressing interest in subjects taught through such traits as scholarship, dramatic sense, appreciation of aspects appealing to pupils
2. Expressing interest in individual pupils through such traits as sympathy, loyalty, friendliness, good humor
3. Expressing qualities of leadership, such as self-confidence, fairness, open-mindedness, energy

# APPENDIX B

## Type Analysis of Learning Activities [1]

A. **General activities.**

1. Developing useful interests, worthy motives, and sincere appreciations
2. Developing traits and habits
3. Participating in class activities
4. Establishing friendly relations with other pupils
5. Developing individual tendencies and abilities
6. Solving problems
7. Improving skills and abilities
8. Making practical use of materials studied
9. Making economical use of time
10. Meeting formal requirements

B. **Specific activities.**

1. Deciding what is to be done
2. Checking teachers' directions for clearness
3. Foreseeing results to be obtained
4. Planning methods of work
5. Gathering reading material
6. Finding desired information from reading material
7. Obtaining information from sources other than reading
8. Recalling useful information obtained from reading and experience
9. Collecting necessary supplies and equipment
10. Obtaining a proper perspective of the course
11. Maintaining a critical attitude toward material studied

[1] Quoted from a tentative list of type-activities performed by pupils in learning subject matter, prepared in connection with the Commonwealth Fund Study of Teacher Training Curricula, directed by W. W. Charters of the University of Chicago and reproduced here by his permission.

12. Preparing for class work
13. Locating specific problems
14. Analyzing problems
15. Organizing material in proper form
16. Summarizing material
17. Memorizing material
18. Combining ideas in proper relationships
19. Discussing implications of material studied
20. Finding or making illustrations for greater clearness
21. Noting, outlining, and recording useful information
22. Carrying on class routines
23. Obtaining criticism from teacher and other pupils
24. Obtaining help from teacher and other pupils
25. Taking tests and examinations efficiently
26. Comparing work with standards in order to check errors
27. Correcting errors

# APPENDIX C

## Type Analysis of Teachers' Activities in Class Management [1]

1. **Teachers' type-activities in recording and reporting facts about pupils.**

Records and reports are made in connection with the following items: admissions, census, health, attendance, tardiness, marks, promotions, class work, withdrawals, schedules, and personal. The list is to be read as follows: the type-activities of teachers in connection with *admissions* may be *collecting data about admissions*, *tabulating data about admissions*, and so on with each of the thirteen type-activities listed.

1. Collecting data about
2. Tabulating data about
3. Searching for records and reports about
4. Making out records and reports about
5. Checking records and reports about
6. Keeping records and reports about
7. Filing records, reports, and correspondence about
8. Sending records and reports about
9. Issuing records and reports about
10. Signing records and reports about
11. Receiving reports about
12. Posting reports concerning
13. Planning records and reports

2. **Teachers' activities in controlling pupils.**

1. Setting up objectives:
   - *a.* Defining objectives in the conduct of pupils' classroom and extraclassroom activities
   - *b.* Explaining to pupils reasons for the performance of classroom and extraclassroom activities

[1] Quoted from a tentative list of type activities involved in Class Management, prepared in connection with the Commonwealth Fund Study of Teacher Training Curricula directed by W. W. Charters of the University of Chicago and reproduced here by his permission.

2. Explaining school regulations
   *a.* Explaining regulations regarding pupils' conduct on school premises (*e.g.*, social conventions, rules concerning school property, permissions to leave premises, disciplinary regulations)
   *b.* Explaining regulations with regard to pupils' routine school activities (*e.g.*, use of building and special rooms, procedure at opening exercises, use of special blanks and forms, conduct at recess and lunch hours, make-up work, excursions)
   *c.* Explaining regulations with regard to personal conduct in classroom (*e.g.*, courteous behavior, non-interference with others' class work)
   *d.* Explaining regulations with regard to health and cleanliness
3. Developing pupils' interest and attention in performing classroom activities
4. Giving instruction to pupils in classroom activities
5. Enforcing instructions to pupils (choosing proper methods of enforcement, selecting effective methods of control; controlling by suggestion, without undue severity or loss of temper, investigating and experimenting with various methods; regulating, controlling, making regulations for, giving permission, directing, checking, supervising).
6. Inspecting and evaluating pupils' behavior in the classroom
7. Giving examinations and tests. Examining and testing involves such activities as:
   *a.* Giving general physical examinations (making physical measurements, examining for special defects, testing eyesight and hearing, weighing)
   *b.* Conducting routine health inspection (examining for vaccination scars, inspecting pupils' cleanliness, watching for symptoms of illness, taking temperatures)
   *c.* Giving general intelligence tests
8. Opening school session (admitting pupils to classroom, meeting and greeting pupils, conducting opening exercises)
9. Excusing pupils (*e.g.*, excusing pupils to visit lavatories, other rooms in the building; to deposit money in school bank)
10. Dismissing pupils (*e.g.*, dismissing classes at recess, at close of morning and afternoon sessions, dismissing pupils to get wraps, to go on errands, to go early because they live at a distance)

11. Detaining pupils (*e.g.*, having pupils remain after school for private conferences, for punishment, to make up back work)
12. Sending pupils on errands (*e.g.*, sending pupils to office, to other rooms, to other teachers)
13. Acting as custodian of pupils' belongings (*e.g.*, caring for pupils' property, personal effects, conducting lost-and-found department, helping to find pupils' property)
14. Collecting materials from pupils (*e.g.*, having pupils bring books, materials, money for class projects, school projects, campaigns, exhibits)
15. Inducting new pupils (*e.g.*, adapting new pupils to the school, adjusting pupils transferred, late entrants, transients; giving special help, explaining school traditions and regulations, introducing to other pupils)
16. Controlling tardiness and absence (*e.g.*, reducing tardiness and absence for all pupils, for pupils beyond compulsory attendance age)
17. Making announcements (*e.g.*, calling attention to weekly and monthly schedules for class work, for school projects; reading notices from the office, reading school bulletin at opening exercises; reminding pupils of special events)
18. Giving educational guidance (*e.g.*, advising pupils about courses, changes in courses, electives; helping pupils to plan programs, to summarize credits, to meet graduation requirements, to make irregular schedules)
19. Using pupil assistants (*e.g.*, appointing and supervising monitors and assistants in handling schoolroom supplies and equipment, in distributing and collecting papers, wraps, in leading pupil groups, in special activities, in helping to supervise playground, lines; appointing leaders for clerical work for office, for passing through halls, for watching windows, thermometers)
20. Determining upon desirable traits, activities, and regulations for pupils:
    *a.* Determining traits to be taught (*e.g.*, cheerfulness, courtesy, decency, honesty, industry, punctuality, respect for teacher and school property, self-control, self-respect, seriousness, thrift, tolerance)
    *b.* Determining regulations for activities (*e.g.*, fixing rewards and penalties for specified misdemeanors; making rules to govern

lateness and absence, rules for passing in the halls; setting up standards for pupils' conduct on the playground; regulating participation in assembly programs)

*c.* Determining activities to be performed (*e.g.*, care of health and cleanliness; personal conduct in classes, on school premises; routine activities in classroom, on school premises)

21. Establishing effective relations with pupils:
    *a.* Expressing interest and friendliness (*e.g.*, accepting favors and gifts from pupils, acting as personal adviser, adjusting difficulties for pupils, avoiding favoritism, securing pupils' confidence, coöperation, sympathizing with pupils)
    *b.* Establishing authority over pupils (*e.g.*, maintaining dignity and reserve, winning pupils' respect)
22. Providing facilities and materials (*e.g.*, seeing that pupils get plenty of drinking water; providing medicine; lending umbrellas and other personal equipment; providing supplies and equipment for class work; assigning pupils to lockers, seats, and room; serving or providing lunches, assigning places for special meetings; attending to light, heat, and ventilation)
23. Applying preventive measures (Measures are taken to prevent pupils from sitting in drafts, from neglecting care of teeth, diet, exercise, eyes; nervous habits such as biting nails; careless use of supplies, apparatus, tools, and machinery; unauthorized changing of seats, leaving building without permission, leaving books and other necessary materials at home, in school)
24. Investigating difficulties (Investigating includes detecting, examining, cross-questioning, finding out, ascertaining pupil's point of view. The difficulties investigated arise in connection with conduct of individual pupils, crowded classroom conditions, race antagonism, disrespect to teachers, indecent or troublesome conduct on the part of individuals and groups)
25. Applying specific remedies:
    *a.* Supplying remedies to pupils who are injured, sick, or fatigued
    *b.* Dealing with pupils who are unclean and untidy
    *c.* Applying remedies to specific defects (*e.g.*, speech defects; use of slang, baby talk; slovenly articulation)
26. Adapting teacher's procedures to physical conditions of classroom and equipment (*e.g.*, adapting procedures to oversized classes, very

small classes, improper arrangement of seats, improper lighting conditions, street noises, lack of writing materials, insufficient supply of textbooks)

27. Adapting teachers' procedures to individual differences (Teachers' activities and school and class management are adapted to individual differences in maturity, home environment, ability to get along with other pupils, physical ability, familiarity with English, home-study facilities, quality of previous school work, temperament, traits, *e.g.*, laziness, overzealousness, silliness, overseriousness)
28. Performing manual services (*e.g.*, helping pupils to wash, helping pupils with their wraps and clothing, repairing and cleaning pupils' clothing)
29. Conducting special exercises (Conducting includes telling stories, reading, conducting and leading singing, playing musical instruments, conducting devotional exercises, patriotic exercises [flag salute], supervising reciting of poems, conducting orchestra for marching)
30. Conducting study exercises (Conducting includes maintaining discipline, proper study conditions, giving occasional help and advice, supervising one group while teaching another, directing pupils in getting help, preventing idling, assisting study coach. Study exercises involve work in study hall, home room, detention room, tardy room, classroom)
31. Conducting other pupil activities (Conducting includes taking charge of, acting as official, supervising, giving directions for. Pupil activities conducted are:
    *a*. Routine school activities (*e.g.*, fire drill, marching through halls)
    *b*. Opening exercises
    *c*. Recess, lunchroom activities
    *d*. Study-hall activities
    *e*. Excursions)
32. Rewarding and penalizing (Rewarding means praising, giving public awards, publishing honor rolls, electing to office, to honorary clubs; commending. Penalizing means selecting and applying effective methods to discourage or punish for misdemeanors:
    *a*. Rewarding meritorious classroom conduct
    *b*. Rewarding meritorious conduct in extraclass activities
    *c*. Penalizing classroom misdemeanors
    *d*. Penalizing extraclassroom misdemeanors)

33. Exhibiting effective teaching traits (Effective traits are those which tend to secure cheerful coöperation from pupils and encourage pupils' efficient performance of classroom and extra-classroom activities. Such traits as forcefulness, cheerfulness, tactfulness, energy, resourcefulness)
34. Scheduling activities (Scheduling means planning times for office hours, games, announcements, repair work, special projects, and other types of activities)
35. Grouping pupils (Grouping includes seating, sectioning, forming special classes, detailing certain pupils to special rooms, forming groups for excursions, and other exercises)
36. Providing worth-while occupations (Activities are provided for pupils who come early, pupils detained for misdemeanors, pupils who complete work ahead of time)
37. Protecting school community (The school community is protected by excluding pupils not vaccinated, sending sick pupils home, suspending pupils with contagious diseases, enforcing quarantine, observing state health laws)

# APPENDIX D

## Type Analysis of Pupils' Routine Classroom Activities[1]

1. Observing school regulations
2. Complying with social conventions (*e.g.*, making due apologies, observing common courtesies, writing notes of sympathy)
3. Acting courteously toward others
4. Respecting desires and welfare of others (*e.g.*, helping younger and weaker schoolmates, playing fair, sharing equipment)
5. Meeting personal obligations as a member of the school
6. Developing personal traits and habits
7. Showing appreciation to teacher
8. Acting courteously toward teachers (*e.g.*, greeting teacher, keeping quiet, refraining from contradiction)
9. Conforming to school customs
10. Attending to routine school activities (*e.g.*, bringing lunch, keeping bulletin board, registering at outset of term, securing absence slips)
11. Moving about the building in an orderly fashion
12. Engaging in opening exercises and special programs
13. Conferring with teachers (*e.g.*, going to teachers as expected, to fill out forms, get permissions)
14. Conferring with teacher (seeking advice voluntarily) concerning work
15. Filling out blanks and forms
16. Visiting laboratories, libraries, lavatories, and other rooms
17. Engaging in recess and lunch-hour activities
18. Making up work out of school hours
19. Making excursions to points of interest
20. Refraining from disorderly and immoral conduct

[1] Quoted from a tentative list of type-activities involved in pupils' routine activities, prepared in connection with the Commonwealth Fund Study of Teacher Training Curricula directed by W. W. Charters of the University of Chicago and reproduced here by his permission.

21. Refraining from interfering with other's work (*e.g.*, avoiding disturbance, taking no more than share of teacher's time)
22. Conforming to classroom regulations (*e.g.*, avoiding chorus answers and snapping of fingers)
23. Exercising initiative in useful ways (*e.g.*, selecting original games, projects)
24. Taking part in routine activities
25. Attending to class work
26. Responding to teacher's directions and suggestions
27. Rendering services to teachers
28. Conferring with other pupils
29. Forming proper health habits
30. Avoiding accidents
31. Safeguarding against contagious diseases
32. Correcting physical defects
33. Wearing suitable and sanitary clothing
34. Eating proper food
35. Attending to personal proprieties
36. Selecting, adjusting, and caring for personal property
37. Caring for other pupils' belongings (*e.g.*, books, clothing)
38. Caring for school property (*e.g.*, keeping buildings clean, inspecting buildings)

# APPENDIX E

## Samples of Study Exercises[1]

The multiple-choice or best-answer form of test predominates in both standardized and informal tests of achievement in most high-school subjects. The predominance of this form is due in part to the fact that it combines definiteness and scope which are the distinctive features of true-false and the essay form of tests. The true-false test restricts the pupil's thinking to a choice between alternatives and is therefore entirely definite. The essay test imposes no restrictions whatever, within the limits of the topic, and accordingly affords large scope for the pupil's responses. The best-answer test, while restricting the pupil's thinking to a central issue, allows him the choice of several possibilities. Thus it is a device well suited to the stimulation and direction of individual thinking.

In view of these facts it is somewhat surprising that best-answer forms have not been used more extensively as teaching devices. For the sake of emphasizing their value, this appendix contains illustrations of best-answer exercises that have proved useful in various high-school subjects. The illustrations are followed by suggestions for the guidance of teachers in constructing similar exercises for personal use.

Like any other mechanical device, the best-answer exercise is open to abuse; it can easily be made too definite and so become the end instead of the means of the pupil's thinking. The exercise directs thinking by restricting the considerations which apply to a given situation. There is consequently the danger that these restrictions may go too far and serve to isolate the given situation from other situations in the course; as when, for example, one learns to demonstrate successive theorems in geometry without recognizing their common elements. This danger may be somewhat minimized by constructing exercises which involve the situations treated in previous exercises.

[1] Quoted from Douglas Waples, "The Best-Answer Exercise as a Teaching Device," *Journal of Educational Research*, January, 1927, by permission of the publishers, The Public School Publishing Company, Bloomington, Illinois.

If the exercises are substituted for the conventional classroom discussion, their value is somewhat conspicuous. When any high-school staff is asked to state its more serious teaching problems, a majority of the problems are likely to demand the sort of pupil direction which the best-answer exercise provides. The well-constructed exercise makes perfectly clear to each member of a class the sort of conclusions he is expected to reach. It presents and analyzes a situation from which the pupil must select whatever will best help him to reach the conclusions. Each pupil is thus able to work at his own best rate toward a conclusion which the teacher deems important for the class as a whole, and the teacher is free to work with the individual pupils who are having difficulties. This procedure is clearly superior to the recitation which undertakes to carry a class of mixed abilities through the same process of thinking at the same rate.

This type of exercise is recommended only as a means of teaching high-school pupils to think, that is, to analyze problems. It is sometimes useful as a form of drill, but is seldom useful in the teaching of appreciations. When properly constructed, such an exercise is a useful means of bringing the pupil's thinking to a focus. In general class discussion there is often much waste because pupils are thinking in different, and sometimes useless, directions.

The exercise should contain enough work to keep all pupils busy but allow them to work at different rates. The teacher is thus free to assist those pupils who need to be shown how to overcome individual difficulties. No matter how appropriate the content of a given course or unit may be, it is the teacher's function to make the contact between the subject matter and the pupils' experience. The exercise may help to supply this point of contact for all pupils at once.

A typical exercise of the sort here considered is composed of four main elements: a self-explanatory problem situation, a list of possible solutions or elements of the problem, a statement of what the pupil is to do with these solutions or elements in order to work out the desired conclusion, and a statement of what the pupil is to do in order to show that his conclusion is satisfactory.

Best-answer exercises may be prepared in advance of the class meeting, but they can seldom be standardized. They must usually be constructed for a particular class at a particular time. Those of larger scope may be used repeatedly. The exercises may be applied to a whole unit, to a week's assignment, to a given principle, or to some minor point which the class needs to think through.

Where it is convenient to group pupils according to their difficulties in a given unit of work, the members of each group may profitably work together on the exercise. When the exercises have been written the comparison of conclusions serves to stimulate intelligent class discussion. It is not essential that the teacher read the papers after class. The exercise has served its purpose when the pupil's thinking has been directed to the desired end, and when he has arrived at an intelligent attitude concerning the principles set forth in the exercise.

Specimen exercises on typical high-school subjects follow. The exercises are analyzed at the close for the purpose of emphasizing the structural elements most appropriate to each subject.

### ENGLISH LITERATURE

If the teacher of a tenth-grade class wishes to stimulate interest in the psychological implications of the play, *Macbeth*, and also of various significant passages, the implications must be presented in such a way as to challenge the least literary pupils to think toward the same end as the brighter pupils and to progress as far as they can in the time available. For this purpose an exercise like the following is appropriate:

Answer the following questions in order with the aid of the text:

1. Taken as a whole, is the play true to life as you know it? Yes..... No.....
2. Check those of the following statements which could be used to support your reply to the question above:
   *a*. There are no such things as ghosts and witches in real life.
   *b*. The ghosts and witches in the play merely represent the guilty conscience of Macbeth and do not affect the other characters.
   *c*. A friend of the king like Macbeth would have more to gain by letting Duncan live than by killing him.
   *d*. When a small act of dishonesty succeeds very well it is likely to encourage a man to become more and more dishonest.
   *e*. A delicate and sensitive woman like Lady Macbeth would not be likely to dare her husband to prove his love by committing murder.
   *f*. Weak women are often more ambitious than more self-reliant women.
   *g*. Many sensitive women can steel themselves to desperate acts, but after committing the act their nervous energy leaves them and they become pitifully weak.
   *h*. If she had been wicked enough to drive her husband to murder Duncan, Lady Macbeth would not have weakened sooner than Macbeth himself.
3. Copy the letters corresponding to the above sentences which you have checked and write numbers after each one referring to the pages and lines of the text which tend to show that the statement is true.

The following exercise differs in purpose from the preceding, for it seeks to relate the material read to the pupils' life experiences.

1. *Pilgrim's Progress* is an allegory. In it different situations that arise represent certain experiences that people go through. Bunyan had in mind for the most part religious experiences, but this allegory can represent many experiences that are not particularly religious in their nature. Here are four parts of *Pilgrim's Progress* numbered from 1 to 4:
   1. The Slough of Despond
   2. The Chained Lions
   3. Vanity Fair
   4. Doubting Castle

   Here are six incidents in everyday life, with a blank space in front of each. Four of these can be taken as illustrations of the four parts of *Pilgrim's Progress* just mentioned. Each one of these four incidents illustrates one and only one of the four parts listed. The other two incidents do not illustrate any of the four. In the blank space in front of the incidents put the number of the part of *Pilgrim's Progress* which you think it illustrates.

   ..... A rather dull pupil has by hard work raised her grade from a low D to a high C.

   ..... A man in the University of Iowa has a book three-fourths finished, but has done no work on it for a year because he had decided that it is not worth completing, although all of his friends have assured him that it is excellent.

   ..... A girl in the University of Iowa who could easily win the highest honors in scholarship is getting Incompletes and Conditions because of the time taken up by social life.

   ..... A boy who might make a real athletic success has decided not to try because there is one part of the work which has "got his goat."

   ..... A pupil who is not especially brilliant has won the liking and respect of his teachers and fellow pupils by his good manners and his cheerful ways.

   ..... A pupil who has neglected his work for the first half of the semester is in doubt whether it is worth while for him to try since the neglected work will handicap him.[1]

SOCIAL SCIENCE

The next exercise, taken from American history, is to be worked in class with the aid of all available references. Its purpose is to explain and emphasize the historical origins of political parties.

How do political parties originate?

1. Make a list of the national parties which have elected at least one president to office.

[1] By M. F. Carpenter, University High School, Iowa City; quoted by G. M. Ruch in his book, *The Improvement of the Written Examination* (New York, Scott, Foresman and Company, 1925), pp. 82 ff.

2. To which of the following possible causes may the organization of these parties be traced? Check the causes you consider significant; then number them in order of decreasing importance.
   *a.* The election of Washington in 1789.
   *b.* The need for efficiency in administration of the national government.
   *c.* The differences in governmental policies advocated by different geographical sections.
   *d.* The issue between capital and labor legislation.
   *e.* The tariff question.
   *f.* The unselfish desire to elect the best qualified candidate.
   *g.* The election of John Adams as president.
   *h.* The transfer of English parties to American politics.
3. Make a list of the most important planks in the platform of each of the parties you have listed in (1) at the time the party was first organized.
4. Check those planks which you consider important in the platform of some one national party at the last presidential election. Indicate to which party the plank belongs.
5. State briefly at least one reason for the present unimportance of the planks you did not check in (4).[1]

The exercise just given is an attempt to emphasize the meaning of facts which must usually be learned as such. The following exercise is intended to teach interpretation of the material studied.

Did the South really gain or lose by the Civil War, in the long run?

1. State in connection with each of the following topics what you consider to be the most *favorable* effect upon the South in the period from 1865 to 1898. Then state what you consider the most *unfavorable* effect.
   *a.* The political reconstruction of the southern states.
   *b.* Economic and social transition of the North in the sixties.
   *c.* The rise of the trust problem.
   *d.* Federal regulation of big business — to 1927.
   *e.* Civil service reform.
   *f.* The tariff problem — to 1927.
   *g.* The currency problem — to 1927.
   *h.* The labor problem — to 1927.
   *i.* Political policies and struggles.
   *j.* Foreign affairs.
2. Check in connection with each of the above topics those effects which you believe to have been directly due to the war. State briefly such facts as may tend to prove that these were effects of the war.
3. Do the favorable effects tend to counterbalance the unfavorable effects? Yes..... No.....

[1] By courtesy of M. Raun, University of Chicago.

4. If you replied "yes" to the third question, try to suggest some political measure which might have tended to produce each of the favorable effects without the war.
5. If you replied "no" to question 3, suggest political measures by which each of these unfavorable effects might have been remedied after the war.

The Van Wagenen American History Scales [1] illustrate the use of the best-answer exercise for the interpretation of historical characters. Each exercise presents a paragraph describing some significant action on the part of a given character. The paragraph is followed by ten statements, each of which suggests a different motive for the action. From these the pupil selects the probable motives.

SCIENCE

The best-answer exercise in science courses may be used either with laboratory demonstration or without it. When there is no demonstration, the same sort of exercise may be used as has been illustrated in terms of social science. The instructor presents a problem and lists a variety of solutions involving scientific principles, the pupil decides which solutions are the most efficient by checking them off, and then supports his decision by applying the principles to be studied or by working out his own principles with the aid of the text material, for example:

An egg is placed in a glass of water with a small piece of shell removed from the bottom of the egg. From the top of the egg a tube extends into the air the other end of which has been sealed to the egg so tightly that no air can enter. If this apparatus is allowed to stand over night, some liquid will have arisen in the tube. Check such of the statements below as you consider reasonable:

1. The rising of the liquid in the tube was caused by air pressure on the water surrounding the egg.
2. The liquid in the tube is the albumen of the egg.
3. The liquid that you see is the water from the glass.
4. The liquid is a mixture of water and albumen.
5. The albumen of the egg passed through the membrane of the egg into the water of the glass and the water of the glass into the albumen as well.
6. The water of the glass passed through the membrane into the albumen. There was no reverse movement.
7. A less dense substance tends to move toward a more dense substance.
8. A more dense substance tends to move toward a less dense substance.
9. If the substance in the glass had been albumen and that inside the egg water, the movement would have been: (*a*) the opposite, (*b*) the same.

[1] Published by the Bureau of Publications, Teachers College, Columbia University.

10. The same process takes place in the human body when we assimilate our food. The substance in the cells of the body is: (*a*) More dense than the food which it seeps up. . . . . (*b*) Less dense than the food which it seeps up. . . .[1]

This type of exercise in science can be improved by the use of diagrams to illustrate the application of the various principles studied, as found in the Ruch-Popenoe General Science Tests.[2] When followed by a list of possible explanations for the phenomena shown in the diagram, these furnish excellent opportunity for individual thinking. The decisions reached may be verified either by experiment or by reference to text materials.

### FORMAL SUBJECTS

When applied to formal subjects, such as mathematics, languages, and practical arts, the best-answer exercise is less useful only insofar as thinking is subordinated to drill. At some stage in the study of any unit in these subjects, there is occasion for the class to think out the implications of the principle to be applied.

The Problem Analysis Test by R. P. Stevenson will serve as a typical illustration from the field of mathematics. While designed for test purposes, the form is one which teachers of mathematics may readily apply to any problem as a means of directing the individual pupil's thinking. The following item is quoted:

The Valley Dale Development Company bought 180 acres of land adjacent to a city for $54,000. They divided it into 200 lots of equal value which they sold for $500 each. What did each of the 200 lots cost the company?

*A*. Which of the following facts are given in the problem?

1. The cost of each lot.
2. The selling price of the whole tract.
3. The number of lots.
4. The profit made by the company.

*B*. Which of the following things are you asked to find out in the problem?

1. The cost of each lot.
2. The number of acres in the land purchased.
3. The selling price of each lot.
4. The cost of the whole tract.

*C*. Which of the following is the most reasonable answer?

| 1. | 2. | 3. | 4. |
|---|---|---|---|
| $180.00 | $270.00 | $360.00 | $500.00 |

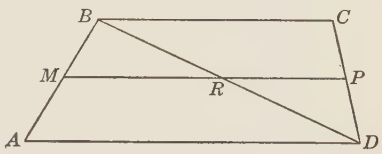
[1] By courtesy of A. Hahn, University of Chicago.
[2] Published by the World Book Company.

*D*. Check all of the following operations which are involved:

Addition Subtraction Multiplication Division[1]

Such an analysis is often made more concrete by confining the list of "things to be found" in *B* to the steps which the pupil must actually take in solving the given problem and then requiring the pupils to number these in the order in which the values must be found to solve the problem.

Exercises of similar sorts apply equally well to most of the units in algebra. In factoring, for example, the pupil may be asked to identify the case involved in a given expression, to check that one of various groupings of the terms which fits the case designated, and then to factor the expression by applying the formula which governs the case. The various numerical factors of the first and third terms of a testimonial may be listed in parallel columns, thereby reducing the pupil's task to the matching of the two sets of factors which give the middle term. The analysis may be carried further when necessary in presenting any new type of problem so that the pupil is not required to do any computation. He has merely to follow through the application of the principle.




In geometry, the exercise will usually be based on a figure from which the pupil is to determine certain relationships. These relationships may, or may not, be those which are covered by theorems previously studied.

*A*. Which of the following can you prove concerning the trapezoid shown above?

1. $MP \parallel BC$.
2. $CP = PD$.
3. $MP = \frac{1}{2}(AD - BC)$.
4. $\angle MRB = \angle BDA$.

*B*. Which of the following will help you prove your choice in *A*?

1. $MP \parallel AD$.
2. $BC \parallel AD$.
3. $BR = RD$.
4. $MR = \frac{1}{2} AD$; $RP = \frac{1}{2} BC$.

*C*. Which of the following axioms, theorems, and corollaries would you use to prove your choice in *A*?

1. If a straight line is parallel to one side of a triangle and bisects another side, it bisects the third side.
2. If equals are added to equals, the sums are equal.
3. If a straight line is parallel to one of two parallels, it is parallel to the other also.

[1] Form 1, Grades VII to IX. Published by Public School Publishing Company.

4. If two parallel straight lines are cut by a transversal, the corresponding angles are equal.

*D*. Which of the following axioms, theorems, and corollaries would you use to prove your choice in *B*?

1. The line joining the midpoints of two sides of a triangle is parallel to the third side and equal to one-half of it.
2. If a straight line is parallel to one side of a triangle and bisects another side, it bisects the third side also.
3. If a straight line is parallel to one of two parallels, it is parallel to the other also.
4. A trapezoid is a quadrilateral with two sides parallel.

*E*. Fill the blank parentheses below with the numbers of the corresponding items checked in *B*, *C*, and *D* just given:

(*A*) ( 1 ) (*B*) ( ) (*C*) ( ) (*D*) ( )
(*A*) ( 2 ) (*B*) ( ) (*C*) ( ) (*D*) ( )
(*A*) ( 3 ) (*B*) ( ) (*C*) ( ) (*D*) ( )
(*A*) ( 4 ) (*B*) ( ) (*C*) ( ) (*D*) ( )[1]

### FOREIGN LANGUAGE

Most recent texts in foreign language are abundantly supplied with drill exercises. The best-answer exercise is perhaps less useful here than in other subjects, because it is an inefficient means of drill. There is the further reason that both translation and composition on the foreign language constitute thinking exercises of the very best type, provided that pupils are not required to think at the same rate of speed. There is little advantage in the use of formal exercises to direct thinking. In the translation of passages in which the thought is involved, exercises patterned after the best-answer reading tests may at times be useful and can be readily constructed for any given passage that the class needs help in interpreting.

### PRACTICAL ARTS

Shop courses, home economics, and art work can use the best-answer exercise to good advantage whenever emphasis is to be placed upon the comprehension of principles rather than mere dexterity. The following exercise is taken from a machine-shop course and applies to the unit devoted to the single-cylinder, two-cycle gas engine. The quotation omits the first five sections of the exercise which contain directions for taking down the machine, studying the materials, and reassembling it.

[1] By courtesy of D. F. Brightbill, Belleview High School, Belleview, Pa.

VI. Can you start the engine? If the engine fails to start, check the reason in the following:

1. Poor compression.
2. Cylinder flooded with gasoline.
3. No gasoline in the carburetor.
4. Spark not timed properly.
5. Contact maker out of adjustment.
6. No spark at spark plug.
7. Spark-plug gap too wide or not wide enough.
8. Ignition not timed properly.
9. Water in gasoline line.
10. Carburetor adjustment not right.
11. Improper valve timing.

VII. The following remedies may be applied to the defects you have checked. Check those remedies you consider most efficient as applied to the defect checked above.

1. Adjust spark plug points to proper gap.
2. The valves should be properly timed in relation to the piston position.
3. Leaky piston rings should be replaced.
4. Carefully check wiring with spark plug on top of cylinder so that spark may be observed in its relation to piston position.
5. Scored cylinders should be reground.
6. Careful observation of cam and contact maker.
7. Valves should be ground until they become leakproof.
8. Choke in carburetor should be closed only long enough to get the engine started.
9. Spark should always be turned on when engine is cranked.
10. Gasoline line should be clean and free from obstructions.[1]

The section of this exercise which follows those just given presents a list of principles which explain why certain of the remedies just mentioned are better than others for the particular defects. The pupil is directed to number the principles to correspond with the remedies which the principle best explains.

The same sort of exercise may be applied without much modification to units in home economics. The pupil is required to select from a list of processes those which are most efficient for the purpose specified and then to select those principles which explain the efficiency of the processes selected.

Similar exercises in the field of art may be constructed by the use of diagrams and sketches. For example, a course in interior decoration will present the sketch of a room in which certain pieces of furniture are to be

[1] By courtesy of H. M. Buerckholtz, University of Chicago.

arranged so as to conform to the principles studied. Various different arrangements may be proposed from which the pupil selects the most artistic and then justifies his selection by checking the appropriate principle.

## TABLE IV

### Elements of the Best-Answer Exercise in Different Subjects

| Subject | Problem Situation | Analysis | Selection or Interpretation | Generalization or Proof |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| English literature | A broad, significant question requiring understanding and application of text. | A list of possible interpretations of the text or selected passages. | Directions to check plausible interpretations from list. | Directions to cite specific references which justify the interpretations checked. |
| Social science | The description of a complex social situation involving a given principle or policy. | A list of the social implications of the situation. | Directions to check the implications that are most important or most pertinent to the given principle. | Directions to test this selection by readings or to outline means of improving the situation. |
| Science | The description of an experiment involving a given scientific principle. | A list of possible explanations for the results of the experiment described. | Directions to check the explanations that are scientifically valid. | Directions to cite scientific principles which support the explanations checked. |
| Language | A list of expressions involving the same rule of grammar, syntax, or rhetoric. | Directions to state a rule to explain the similarity of these expressions. | A list of other expressions, some involving the rule and others not. Pupils check those involving the rule. | Directions to test adequacy of rules derived by comparison with rule found in text. |
| Mathematics | An algebraic or geometrical problem to be solved. | A list of the elements of the given problem. | Directions to organize these elements according to some formula or plan. | Directions to solve the problem or prove the conclusion. |
| Home economics | The description of a situation in home management which is unsatisfactory. | A list of both desirable and undesirable conditions in this situation. | Directions to check the undesirable conditions. | Directions to state or check remedies for the conditions checked by applying certain rules. |
| Shop | The description of a problem requiring use of machine tools. | A list of the operations required to do the job. | Directions to check the correct methods of performing these operations from a list of methods. | Directions to justify the methods selected by reference to trade or scientific principles. |

SUMMARY

In Table I an attempt is made to indicate the structure of the best-answer exercise as applied to units in the subjects already mentioned. The substance of this discussion of the best-answer exercise may be summed up in the statement that the exercise helps to solve those problems of high-school teaching which are due to the difficulty of directing individual thinking. The next step toward the adoption of a more adequate teaching procedure is taken when pupils are taught to construct their own exercises. This may be accomplished in the sense that pupils can learn to organize the data of a given unit so as to reach conclusions of their own. The best-answer exercise may thus be used to teach those methods of organizing data which are most appropriate to the given subject. Such exercises are useful in working from the group recitation procedure to a more adequate procedure of directed study.

# APPENDIX F

## Difficulties in Teaching High-School English

The difficulties contained in the following list were obtained from three sources: (1) by interviewing teachers of high-school English; (2) by translating the type-difficulties of the present text into situations peculiar to the English classroom, and (3) by translating titles of magazine articles on the teaching of English (since 1900) into statements of typical problems.

The questions used in collecting the difficulties by recorded interviews with teachers of high-school English were as follows:

1. Please think of your most troublesome class.
   *a.* In what ways do the pupils most frequently cause you trouble?
   *b.* Specify and illustrate the items of subject matter which you find most difficult to teach and suggest, if you can, why the items are difficult.
2. What general abilities, such as use of grammar, paragraphing, grasp of author's meaning, and the like, that are not related to any particular subject matter, do you find difficult to teach? As before, specify and give examples to show why the abilities are difficult to teach.
3. Think of some pupil who failed last semester. Describe such difficulties as you met in your efforts to secure better results.
4. What are the most frequent deficiencies in English among your pupils at the outset of a course? What difficulties in teaching do the deficiencies present?
5. What would you say offhand to be the most serious difficulties of high school English teachers in general?

[1] Prepared by Angell Mathewson, Principal, Hershey High School, Hershey, Pa. "A Technique for the Location and Partial Solution of Difficulties in Teaching High-School English." Master's Thesis, University of Pittsburgh, 1925. Ten difficulties were selected from a larger number under each heading for the purpose of determining coefficients of correlation between the ranks assigned to the difficulties of each group by the same group of teachers at different times.

**Concerning Written Composition.**

1. How to get pupils to write to convey ideas rather than merely to satisfy the assignment
2. How to develop initiative and originality in writing
3. How to teach pupils to make use of their imaginative powers in writing
4. How to teach pupils to write out in clear, simple sentences and paragraphs the thoughts they have in mind
5. How to prevent pupils from writing too rapidly to write well
6. How to teach pupils to organize materials
7. How to select essential points when time for instruction in composition is severely limited
8. How to prevent carelessness in writing
9. How to find intriguing topics for composition
10. How to teach the pupil to put his *own* ideas into writing
11. How to teach pupils to avoid mistakes that have repeatedly been called to their attention
12. How to teach pupils to record grammatical errors and their solutions
13. How to teach pupils to record misspelled words in notebooks
14. How to develop fluency in writing
15. How to use oral composition as a preparation for written composition
16. How to teach pupils to discriminate between such words as " their " and " there "
17. How to teach pupils to spell figures instead of using numerals
18. How to teach pupils to use " lie " and " lay " correctly
19. How to develop the pupil's powers of observation in order to improve his writing
20. How to grade a thoughtful composition with a few mistakes in punctuation

**Concerning Grammar and Vocabulary.**

21. How to teach the use of correct grammar on the street as well as in the classroom
22. How to teach pupils to apply known rules of grammar to speech and writing
23. How to overcome the use of double negatives
24. How to train pupils to exercise the same care in spelling in written work that they would use if asked specifically to spell orally the words they miss in composition

25. How to determine the most useful words to emphasize in trying to build vocabularies
26. How to teach pupils to use the new words in the lesson in their everyday speech
27. How to teach the pupil to distinguish between the parts of speech
28. How to teach wholesome respect for the correct use of principal parts of verbs like "see," "do," and "go"
29. How to teach pupils to use "shall" and "will" correctly
30. By what criteria should a ninth-grade English teacher be guided in modifying his classroom vocabulary to meet the understanding of his pupils

**Concerning Sentence Structure and Spelling.**

31. How to get the pupil to realize that the sentence is the basis of all English writing
32. How to teach pupils to think a sentence to the end before they write it
33. How to teach pupil to know when he has written a good, clear sentence
34. What are the efficient methods for teaching a clear understanding of the framework of a sentence
35. How to help the pupil to recognize a sentence when he sees it
36. How to train a pupil to speak fluently, omitting the "ands" and "buts"
37. How to teach pupils to subordinate ideas in a sentence properly
38. How to teach pupils to relate one sentence to another properly
39. How to teach pupils not to write long and overcrowded sentences
40. How to impress pupils with the importance of care in the spelling of simple words

**Concerning Oral Work, Previous Preparation, and Use of References.**

41. How to make oral composition effective
42. How to combine oral English with other English courses in the high school
43. How to teach pupils to study description so carefully that they will be able to reconstruct details orally into a composite mental picture
44. How to teach a pupil to express his thoughts fluently
45. How can a teacher deal with a pupil in class whose previous preparation and English "background" is far below the average of the class

46. How to teach a ninth-grade pupil to use an encyclopedia for reference work
47. How may the natural slovenliness of a pupil's conversation be corrected by classroom exercise
48. How to eliminate slang from the class discussions
49. How to overcome a lack of outside sources of information, such as reference books and encyclopedias
50. What is the best way to help the pupil to develop orally a topic of the assignment on his own initiative without detailed questions from the teacher

**Concerning Paragraphing, Punctuation, and Outlines.**

51. How to teach pupils to make notes upon readings with a view to constructing a formal outline at the end of the reading
52. How to teach pupil to write unified and coherent paragraphs
53. How to keep the pupil from becoming confused by too many rules of punctuation
54. How to teach pupils to write well-developed paragraphs
55. How can pupils be taught to apply the principles of punctuation that are drilled in dictation exercises
56. How to prevent pupils from constructing outline by selecting sentences at random instead of making an original evaluation of the material
57. How to teach pupils to select correct material for a paragraph
58. How to teach pupils to use commas in the right places
59. How to teach a pupil when to begin new paragraphs
60. How to train pupils to apply rules for capitalization

**Concerning Reading.**

61. How can pupils be taught to visualize characters and scenes
62. How to teach pupils to read appropriate materials rapidly and for the sake of enjoyment, rather than to study them as a school chore
63. How to get pupils to associate dialect with words of their own vocabulary
64. How to teach characters of literature so that pupils will be able to discriminate characteristics rapidly
65. How to make characters in literature familiar to pupils without requiring passages to be memorized
66. How to get pupils to find essentials in reading without too much help

67. How to help pupils interpret classical poetry
68. How to teach pupils to compare style, character delineation, and other elements of one book with another
69. What is the best way to prevent pupils from merely reading words and to teach the habit of reading connected sentence ideas
70. How may students be taught to locate exact meanings for new words

**Concerning Appreciation of Literature.**

71. How to give high-school pupils an idea of the meaning of true culture in an English course
72. How to interest the pupil in literary work sufficiently to lead him to read voluntarily
73. How to find sufficient time in class for students of poor ability to form appreciations of literature without impeding the progress of more able students
74. How to teach pupils to see the implications in poetry
75. How to help pupils recognize the causal relations between literature of previous centuries and present life situations
76. How to help pupils to appreciate foreign culture, art, and national traditions of which they read
77. How to raise pupils' appreciation to include something better than juvenile literature, such as Alger and " Elsie " books
78. How to convince pupils that English readings have pleasure-giving possibilities
79. How to help pupils to see that exciting narrative is not the only worth while type of literature
80. How may teacher balance emphasis between understanding and appreciation

**Concerning Interest in English.**

81. How to teach pupils to study a book as a whole rather than by daily assignments, thereby forming an adequate perspective
82. How to develop sufficient interest in readings to lead pupils to " dig out " all the fine points of the subject matter
83. How to get pupils to work with interest and not do mere hackwork in class
84. How to inspire pride in a well-written paragraph and desire to write paragraphs well

85. What is the best way to give pupils an alluring pre-view of the year's work in English
86. Where classes are grouped according to mental ability, how may the teacher best arouse interest in English among pupils of limited background
87. How may the less able pupils be led to a vision of larger units of reading material
88. How to develop interest in memorizing and quoting poetry
89. How to teach pupils to memorize poetry and retain it considerably beyond the recitation period
90. How to interest pupils in technical forms of English

**Concerning Attitudes and Transfer of Training to Life Situations.**

91. How to make impressive the relation of class work in English to the pupils' everyday lives
92. How to overcome laziness in applying English training to work in other courses
93. How to develop a class atmosphere that stimulates interest in good English usage as such
94. How can pupils be taught to select independently the essential ideas in assigned readings
95. How can the teacher attend properly to all the individual work that seems necessary in teaching English effectively
96. How to adjust an English course to probable future life needs
97. How to overcome the apathy of a pupil who is merely waiting until he is old enough to leave school
98. How to prevent pupils of good mentality from failing in recitations because of timidity
99. How to eliminate nonessentials from the course in order to provide more time for the work that really matters; namely, practice in intelligent reading and clear expression
100. How can a socialized recitation in English be conducted in such a way that pupils will welcome criticism from other pupils

**Concerning Correlation, Form of Expression, and Pupil Study.**

101. How to impress the pupil with the importance of pure speech
102. How to teach pupils to use good English in spite of the influence of a foreign-speaking community

103. How to deal tactfully with the pupils' home influences that place a premium on popular expressions and vivid language rather than upon correct speech
104. How may pupils' interest in science subjects be effectively transferred to English courses
105. How to secure coöperation of teachers of other subjects in teaching good standards of English
106. How to induce other teachers to coöperate in a program of pure speech in the school
107. How to teach pupils of poor ability to relate ideas correctly in a given unit of subject matter
108. How can pupils be led to make original reactions to English classics instead of mimicking the author's thoughts
109. How to teach pupils to express themselves clearly as a matter of habit
110. How can a teacher secure attention to form of expression as well as to thought

**Concerning Pupil Study.**

111. How may pupils with poor previous training be made to overcome difficulties in written composition rapidly enough to do average ninth-grade work by the middle of the term
112. How to convince pupils who take their work casually that English merits a considerable amount of careful preparation
113. How to convince the pupil that good English is necessary both in and out of school
114. How to give pupils enough fun in the English class so that good reading will become a hobby after leaving school
115. How to overcome a pupil's reluctance to search beyond the textbook for information on a given topic
116. How can the teacher arrange to give enough class time to discussion of collateral readings in English so that the pupils may obtain sufficient interest in and acquaintance with the readings
117. How to deal with a pupil in the formal grammar class who shows no signs of previous instruction in grammar
118. How to supply deficiencies in the pupil's reading to the point at which he is able to interpret the literature being read
119. How to teach pupils to respect the time limits set for covering outside readings

120. How to train pupils to collect information and illustrations from daily experiences that relate to the work of the class

**Concerning Motivation.**

121. How to discourage pupils from "borrowing" ideas and copying others' writing
122. How to find class exercises that stimulate energetic attention
123. How to get pupils to feel pleasure in speaking and writing correct English
124. How to make pupils see that it will be to their advantage to use irregular verbs correctly even though their parents do not
125. How can pupils be made to see that habits of speech and habits of study formed in ninth-grade English will largely determine success or failure in future English work
126. How to develop motives for writing as well as possible
127. How to train pupils to analyze classical literature for deeper meanings than appear on the surface
128. How is Shakespeare most effectively presented to high-school pupils
129. How may the study of literature and composition best be taught to mutual advantage
130. How to help pupils to overcome difficulties with the vocabulary of argumentative literature

**Concerning Miscellaneous Difficulties.**

131. How to train pupils to hand in written assignments on time
132. How to teach the pupils to speak forcefully from the beginning of the course
133. How to train pupils to ask intelligent questions concerning their readings
134. How to explain literary ideas adequately to foreign-speaking pupils
135. How to make pupils understand the real purpose behind assigned topics for written compositions
136. How to train pupils to recite without being led by the teacher's questions
137. What are good methods to employ in teaching required grammar to pupils of low intelligence

138. How to teach pupils to make a clear statement in one sentence
139. How to help pupils to discuss literature that does not seem sufficiently exciting to merit discussion
140. How to utilize objectives to prevent over-emphasis of some phases of English work

# APPENDIX G

## Difficulties in the Teaching of Home Economics[1]

The following list of difficulties was compiled by Professor Beulah I. Coon, of the School of Education, University of Chicago, from previous studies, directors of teacher training, and supervisors in the field. The difficulties obtained from previous studies were organized in the form of a check list and then rated by supervisors according to various criteria as applied to teachers of different types. Additional difficulties, as indicated, were also reported by the supervisors returning the check list.

**Difficulties in teaching — general.**

1. Planning the work for the week, the unit, the semester, or longer period
2. Planning an adequate amount of work for each day
3. Organizing the work for the day, week, semester to leave out unessential details
4. Giving proper emphasis to all phases rather than emphasizing the phase teacher likes best
5. Arranging for gradation in point of difficulty of problems taken up
6. Planning for time for pupils to master difficulties
7. Organizing and teaching work adapted to the needs of the group
8. Getting acquainted with individual pupils and recognizing their needs
9. Adapting plans to meet unexpected situations
10. Keeping and holding interest of class on worth-while problems
11. Helping pupils analyze and achieve high standards of work
12. Correlating own work with other subjects studied by pupils
13. Adapting work to needs of individual members of class
14. Analyzing own results and maintaining a critical and experimental attitude toward own teaching

[1] The lists herein shown are quoted by permission of the author.

15. Developing hygienic, artistic, efficient habits in pupils rather than merely offering information
16. Helping pupils to analyze points of technique and to develop good motor habits
17. Stimulating the development of good mental habits such as analyzing a problem, using critical judgment, reasoning out situations

**Developing sense of responsibility in individual pupils.**

18. For own accomplishments
19. For routine duties of the classroom
20. For development of the daily lesson
21. For self-government

**Developing ability of pupils.**

22. To organize own thinking
23. To organize own work
24. To manage a group
25. To coöperate with others
26. To be independent and resourceful
27. To judge results
28. Using immediate problems and materials of pupils as an approach to teaching life problems
29. Using effective reviews
30. Making well-motivated, stimulating, and clear assignments
31. Supervising the study by pupils
32. Giving practical examinations and tests
33. Diagnosing and readjusting own work in light of results of tests
34. Stimulating the pupils to study references and make associations of their study with everyday problems

**Leading pupils to carry on.**

35. Home work
36. Home projects
37. Investigations of topics studied in school
38. Evaluating growth and achievement of pupils
39. Using textbooks effectively

**Difficulties in class management.**

40. Keeping the classroom, cupboards, and supplies neat, clean, and in good order
41. Arranging such lighting, heat, and ventilation as makes for the physical health and comfort of pupils
42. Distributing and collecting supplies in such a manner as to avoid confusion and waste of time and teach home efficiency
43. Planning carefully to get routine work done easily and quickly
44. Insuring efficient use of time on part of all members of class
45. Preventing disciplinary difficulties
46. Meeting disciplinary difficulties effectively when they arise
47. Learning names of individual children

**Difficulties in administration.**

48. Getting acquainted with parents and getting their coöperation
49. Learning home conditions and using these in organizing work of pupils
50. Contributing to parent-teacher association meetings and to other school functions
51. Participating in life and activities of the community
52. Arousing interest of parents, administrators, fellow teachers in the work of the department
53. Adjusting herself to local conditions
54. Having command of practical subject matter and local possibilities so as to advise with homemakers or others in the community
55. Enlarging and improving library and arranging books and bulletins for most effective use
56. Keeping adequate records of attendance, absences, and grades
57. Making prompt reports to superintendent, school board, or supervisor
58. Leaving at end of year record of work which has been taught
59. Providing and using adequate and suitable illustrative materials
60. Keeping cost of the department within a budget
61. Selecting suitable equipment and supplies and arranging these for the most efficient use

DIFFICULTIES ADDED TO CHECKING LIST

Minn.
1. Seeing need for new equipment and securing it
2. Seeing possibilities for rearranging desks and the like to more closely approximate home conditions

3. Coöperate with other health agencies in community
4. Advancing professionally — attending conferences, subscribing to and reading periodicals and magazines

Mass. 5. Coöperation with other teachers who must use same equipment

Vt. 6. Bringing work to attention of community
7. Staying in same school more than one year
8. Holding girls to thoroughly prepared broad lessons
9. Offering work sufficiently broad in keeping with girls' abilities
10. Entering into life of girls outside classroom (H. E. Club, etc.)
11. Recognizing her responsibility socially in small towns which are apt to be cultural
12. Coping with questions of social and physical hygiene on part of her girls

New Mex 13. Determining definite aims or objectives for Home Economics in a given community
14. Determining most efficient means of getting instruction over in a given community
15. Determining interests of group and individual
16. Handling discussion so girls are really thinking — teacher and class working toward the solution of a problem
17. Carrying responsibility as member of community (church, social, recreational, civic)
18. Improving professionally

Del. 19. Knowing how to get assignments in sewing finished and handed in on time
20. How to keep bright, quick girls busy while slow ones finish work
21. Knowing how to coöperate with school without allowing extra work to upset regular work, how much to promise and when to draw the line

Neb. 22. Using interest of students in worth-while problems as means of interesting them in more worth-while work
23. Developing interest of students in other subjects than those being studied
24. Encouraging and guiding pupils to master difficulties
25. Organizing and teaching work adapted to needs of individuals, part of group and all of group

| | | |
|---|---|---|
| Conn. | 26. | Making the instruction seem spontaneous rather than a retailing of material given by books |
| Mass. | 27. | Keeping her dress suitable and in accordance with requirements of the position and work to be done |
| S. Car. | 28. | Making inventory of equipment and articles on hand |
| | 29. | Adopting plans to maintain the deportment |
| Mo. | 30. | Having professional pride |
| | 31. | Understanding and carrying out high standards of professional ethics |
| | 32. | Maintaining reasonable balance between work and play for herself |
| Nebr. | 33. | Lack of contact between student teacher and pupils due to Senior Schedules |
| | 34. | Keeping fit |
| | 35. | Maintaining proper mental attitude toward her work |
| Mich. | 36. | Control of voice in classroom — ability to make self heard and command attention |
| | 37. | Use of blackboard — legibility of writing |

# APPENDIX H

## Difficulties in Learning Ninth-Grade Social Science

The following list of pupils' difficulties in learning social science was obtained by the writer through personal interviews with pupils, parents, and teachers. The difficulties suggest points at which instruction in methods of study may be directed. Each difficulty likewise helps to define significant teaching difficulties in the subject. The "subject" comprises ninth-grade courses in civics, American history, and ancient history. Some of the difficulties overlap the headings used for classification and accordingly appear under more than one heading.

A. **Reading difficulties.**

1. Cannot develop sufficient interest in the formal statements of the textbook to read the material easily
2. Reads words and sentences without getting clear meanings; *e.g.*, does not note causal clauses in a sentence which give reasons for previous statements
3. Not familiar with important words; *e.g.*, cannot distinguish between "industry" and "occupation"
4. Home conditions develop nervousness that makes reflective reading impossible
5. Cannot follow the thread of the historical narrative easily enough to find pleasure in it
6. Home influences and conditions prevent formation of good reading habits
7. Does not see connection between ideas in the text and personal experiences
8. Cannot get perspective of textbook assignment as a whole
9. Cannot get mental picture of location of armies, positions on maps, and other graphic situations
10. Does not form opinions concerning significance of facts read

11. Reads too slowly to assimilate assignments in time available
12. Does not stop to think what readings mean
13. Does not clearly understand the teacher's purpose in making text assignments
14. Does not ask questions on parts of text that are not clear
15. Fails to understand dictionary definitions of unfamiliar words looked up

B. **Difficulties in organizing material read.**

1. Unable to select relevant details as in filling in a skeleton outline
2. Does not relate explanatory details to main issues in class discussion
3. Does not speak to the point in class discussion
4. Cannot abstract main tendencies from significant details
5. Cannot outline material read by selecting important topics
6. Does not recognize differences in emphasis, as when equal attention is given to two parts of the assignment that are of unequal importance
7. Does not use class tests as means of organizing material covered
8. Is accustomed to memorize isolated facts
9. Does not follow specific directions that are intended to help him organize readings
10. Does not reflect upon nor make associations with material read

C. **Difficulties in selection, recall, and relation of ideas in class discussions.**

1. Sees no relation between similar institutions, tendencies, and events when these bear different names or are discussed in different contexts
2. Cannot connect situations discussed in readings with similar situations in real life that he has experienced or heard described.
3. Does not remember significant facts, *e.g.*, whether Pericles or Miltiades led the Greeks at Marathon
4. Does not supply a life setting to situations discussed in class
5. Does not see connection between the study of history and purposes he considers worth while, consequently does not see " what history is all about "
6. Cannot pick questions to pieces and reword them so as to suggest to himself how he can use his knowledge in answering them
7. Does not memorize dates in relation to other events of same period
8. Does not retain clear impressions of the map

9. Does not connect one lesson with previous lessons
10. Does not relate modern parallels to historical events

D. **Difficulties in taking part in class discussions.**

1. Has not sufficient interest in the problems discussed to volunteer opinions
2. Is discouraged at home from expressing opinions and has formed the habit of keeping silent
3. Can neither think nor talk " on his feet "
4. Language difficulties make him reluctant to speak in class
5. Unable to think and talk to the point
6. Becomes easily discouraged and sits down before he has made his point
7. Is afraid to show ignorance by asking questions
8. Begins to answer questions before he has grasped the point that he is expected to cover
9. Is reluctant to express personal opinions because they are personal
10. Does not try to learn the use of important new words from the teacher's use of them in class, hence cannot express ideas clearly
11. Does not pay sufficiently close attention to follow the train of thought

E. **Difficulties in applying class discussions and readings to personal experiences.**

1. Inadequate experience with forms of government, social agencies, and the like in rural environments prevents understanding of problems discussed in relation to its conditions
2. Has not sufficient imagination to supply the details to make the situation discussed in class or in the textbook seem real
3. Home training has produced unsocial attitudes toward social problems of fundamental importance
4. Pupil is too immature to have acquired a social point of view concerning civic problems, *e.g.*, care of children, political graft, crime, civic health
5. Pupils reflect parents' status in the community, which is sometimes so inferior that the implications of leadership are hard to grasp
6. Textbooks deal with adult experiences that pupils have never met
7. Has not sufficient interest in social problems to stimulate proper attention to discussion

8. Has no personal opinions concerning social and political problems as such
9. Has difficulty in thinking through a problem when it is not reduced to mechanical steps
10. Is unable to select data pertinent to a given problem when data are obtained from more than one source

F. **Difficulties in location and use of references other than textbooks.**

1. Pupils' background of general reading is inadequate
2. Cannot find pertinent references in school or general library
3. Cannot apply references to class discussions when books are selected and made accessible
4. Improper reading habits prevent efficient use of references; *i.e.*, he does not use material contained in the references in the manner intended by the teacher
5. Does not make use of study helps and library directions in collateral reading
6. Does not keep main points of the assignment in mind when reading outside references
7. Lacks initiative in looking up stories and other interesting material related to the points discussed in the text.
8. Lacks the interest in social problems and in the life of strange people which would make collateral reading enjoyable
9. Does not make the effort to locate places on the map
10. Not sufficiently critical of statements found in textbooks and other references; relies on verbal memory
11. Fails to get teacher's suggestions for optional readings
12. Unable to make good book reports
13. Does not read newspapers and clip pertinent material

G. **Personal traits causing difficulty in attempt to master the subject.**

1. *Leadership*, deficiencies in
   *a.* Does not voice opinions readily
   *b.* Dodges responsibility
   *c.* Unable to defend positions convincingly
   *d.* Lacks confidence in soundness of original conclusions
   *e.* Is narrow-minded and prejudiced in estimate of social issues
   *f.* Is unwilling to champion the unpopular side of an argument

*g.* Shows no enthusiasm and does not make friends easily
*h.* Has little interest in social studies as means of social betterment
*i.* Does not identify himself with the situations discussed in class
*j.* Takes no active part in the school organizations
*k.* Does not volunteer additions to what has been said in class
*l.* Loses interest in his point if it is not immediately recognized by the class

2. *Coöperation,* deficiencies in
*a.* Is lazy
*b.* Does not persist in his search for better answers or solutions
*c.* Does not distinguish between superficial and adequate answers in class
*d.* No interest in school work as such
*e.* Does not practice democracy by his efforts to coöperate in class
*f.* Lacks the initiative to supply helpful illustrations in class
*g.* Does not bring relevant material to class unless told to do so
*h.* Is irregular and unsystematic in daily preparation
*i.* Does not ask to have questions repeated when their point is not clear
*j.* Expresses himself badly and makes no attempt to interest the class
*k.* Does not try to detect and correct errors made in class
*l.* Does not select topics beforehand on which to speak in class
*m.* Not reliable when given special assignments
*n.* Takes no active part in class programs

# APPENDIX I

## Traits of High-School Teachers

The following list contains twenty-three personal qualities or traits that high-school teachers should possess. Each trait is followed by various activities that suggest ways in which the trait is expressed, thereby serving to define the trait more clearly.

The traits were obtained by recorded interviews with a representative number of high-school principals, parents of high-school pupils, high-school teachers, and high-school pupils. The interviews yielded one hundred and eight different traits that were reduced for greater convenience to the twenty-three here shown.[1]

1. **Ambition** (progressiveness)
   - *a.* Keeps abreast of current professional literature
   - *b.* Is well informed about current events and topics of general interest
   - *c.* Seeks new materials and methods of teaching
   - *d.* Takes extension courses, part-time work, and occasional years of graduate study
   - *e.* Has a critical attitude toward the content of courses taught
   - *f.* Has many interests — sports, music, reading
   - *g.* Is not set in his ways
   - *h.* Seeks and follows advice of competent critics and school authorities
   - *i.* Is conscious of his limitations and proceeds systematically to remove them

2. **Businesslikeness** (punctuality, promptness, dispatch, accuracy, definiteness, effectiveness, ability to teach, fluency, alertness)
   - *a.* Sees that he has all of the necessary materials at hand
   - *b.* Gets down to business quickly

[1] The list as it stands is a tentative list, subject to further refinement. The trait list was prepared by Miss Eleanor Howard in connection with the Commonwealth Fund Study of Teacher Training Curricula, directed by W. W. Charters of the University of Chicago, and reproduced here by his permission.

*c.* Keeps to the subject in conversation
*d.* Pays bills promptly
*e.* Gets out required reports in good form
*f.* Meets appointments punctually
*g.* Makes clear to each pupil exactly what is to be done
*h.* Criticizes pupils' work explicitly
*i.* Adapts teaching to pupils' needs and abilities
*j.* Makes economical use of time
*k.* Relates class work to other school subjects and to life situations

3. **Cheerfulness** (optimism, sense of humor)
   *a.* Is very jolly and optimistic
   *b.* Is glad to be alive
   *c.* Sees the funny side of incidents that happen in class
   *d.* Makes humorous comments that help pupils to retain important facts
   *e.* Laughs with pupils over jokes
   *f.* Is not moody, jolly one day and grumbly the next
   *g.* Does not wear " a long face "; is not glum
   *h.* Smiles in the presence of annoying and irritating difficulties

4. **Coöperation** (helpfulness, trustfulness, willingness, appreciativeness, unselfishness, loyalty)
   *a.* Follows suggestions and directions of supervisory officers
   *b.* Dismisses the class when the bell rings
   *c.* Goes to the head of the department and seeks his advice about changes
   *d.* Helps other teachers with their extra-curricular duties
   *e.* Helps pupils with out-of-school activities when it is not his duty to do so
   *f.* Assumes minor additional duties without complaint
   *g.* Shows willingness to share the equipment of the school with other teachers
   *h.* Offers services at off-periods or at off-times, when not obliged to do so
   *i.* Abides by decisions of the faculty
   *j.* " Talks up " the system to outsiders

5. **Dependability** (trustworthiness, responsibility, conscientiousness, industry, carefulness, preparedness, consistency, thoroughness, patience, perseverance)

*a.* Keeps appointments
*b.* Does routine work as efficiently as he can
*c.* Takes a great deal of trouble to make pupils clearly understand
*d.* Is consistent in his statements
*e.* Does not leave a school dance before it is over, thereby leaving boys and girls without a chaperon
*f.* Never shirks a duty
*g.* Keeps at a problem until he gets results

6. **Enthusiasm** (animation, interest in pupils, interest in work, interest in profession, interest in community, inspiration)
   *a.* Lives his subject, acts it, breathes it
   *b.* Radiates enthusiasm
   *c.* Attends social events of school
   *d.* Affiliates with national, state, and local teachers' organizations
   *e.* Compliments both teachers and pupils when they have done good work
   *f.* Pays more attention to matters of real professional advancements than to personal benefits such as sick leave, tenure, bonus

7. **Fairness** (fairmindedness)
   *a.* Gives reasons for corrections he makes on pupils' papers
   *b.* Evaluates pupils' work objectively
   *c.* Applies school regulations to all pupils with equal justice
   *d.* Withholds decisions until all evidence is in
   *e.* Apologizes to a pupil for having misjudged him
   *f.* Does not discriminate between pupils, either from personal like or dislike, or because of poverty or wealth
   *g.* If a pupil fails in his teaching subject, he does not blame the teacher who instructed the pupil the previous year
   *h.* He does not scold the whole class for one pupil's misdemeanor
   *i.* He finds good qualities in pupils who are uncultured

8. **Forcefulness** (ability to discipline, decision, firmness, courage, self-confidence, purposefulness)
   *a.* Receives close attention to whatever he says
   *b.* Speaks as though he means what he says
   *c.* His handshake expresses power, strength, reserve

*d.* Keeps order without assistance from high officials
*e.* Is not afraid to give criticism
*f.* Renders definite and prompt decisions
*g.* Answers in a decisive way when questioned about his work
*h.* Knows definitely what he is going to do and how he is going to do it when he enters the room
*i.* Commands pupils' respect
*j.* Does not allow serious infractions of rules

9. **Friendliness** (approachability, considerateness, kindliness, thoughtfulness, sympathy, adaptability, agreeableness, pleasantness)

*a.* Speaks to pupils when he meets them on the street
*b.* Gives other teachers a pleasant good-morning
*c.* Fits himself into the system harmoniously
*d.* Gives parents a cordial welcome when they come to visit the school
*e.* Visits pupils who are ill, or writes them notes
*f.* Buys lunch for a pupil who has forgotten his money
*g.* Makes no unreasonable requirements
*h.* Does not embarrass a pupil before the rest of the class

10. **Good judgment** (discrimination, discretion, foresight, insight, understanding, tact)

*a.* Sees things that may happen and plans action ahead of time
*b.* Does not talk too much in class
*c.* Does not allow pupils to discuss other teachers
*d.* Does not tell irrelevant jokes in class
*e.* Does not punish pupils for offenses that might better be overlooked
*f.* Meets the criticism of uninformed parents pleasantly
*g.* Does not criticize his former administrator, co-workers, the curriculum, or the town itself
*h.* Does not go on " wild parties "
*i.* Quickly detects the pupils' attitude and spirit
*j.* Knows when a pupil is ill and when he is bluffing

11. **Good personal appearance** (carriage, cleanliness, neatness, good taste)

*a.* Keeps clothes clean and well pressed
*b.* Keeps buttons sewed on, shoes shined
*c.* Stands, walks, sits erect

*d.* Dresses appropriately
*e.* Does not wear the same clothes day after day
*f.* Does not wear gaudy jewelry
*g.* Is well groomed

12. **Good sportsmanship**
*a.* Takes harsh criticism in the right spirit
*b.* Is not afraid to suggest plans and propositions, yet is not irritated when they are turned down
*c.* Does not have a grouch against his superiors because they do not praise his work
*d.* Never pities himself
*e.* Does not seek praise for his accomplishments
*f.* Does not intrude himself upon others
*g.* Goes out of his way to help unpopular teachers or pupils who need help

13. **Healthfulness** (athleticism)
*a.* Does not fatigue even under a strenuous day's work
*b.* Keeps in good physical and mental condition
*c.* Does not show any manifestation of nerves
*d.* Takes part in sports — skating, dancing, horseback riding

14. **Honesty** (integrity, truthfulness, frankness, sincerity)
*a.* Pays his debts
*b.* Does not try to deceive
*c.* Is straightforward
*d.* States his opinions frankly about anything that affects him, the students, the faculty
*e.* Gives advice, criticism when needed; does not always try to smooth things over
*f.* Does not bluff
*g.* Keeps his promises
*h.* Is not nice to other teachers merely to gain favors from them

15. **Initiative** (independence, originality, resourcefulness)
*a.* Gives helpful suggestions for the betterment of the school
*b.* Attempts constructive creative work
*c.* Suggests propositions and plans that will improve his department

*d.* Tries out new ideas found in professional reading
*e.* Collects outside material for his classes wherever he can find it
*f.* Is independent of the textbook to the extent that he can supplement the textbook
*g.* Does not wait for work to be laid out for him
*h.* Makes full use of all available material and suggestions
*i.* Meets and solves problems without always seeking aid from someone else
*j.* Does not bother superior officers with trifling matters

16. **Intelligence** (scholarship)
*a.* Has a good command of English, both in speech and writing
*b.* Asks intelligent questions
*c.* Knows how to teach his subject
*d.* Reasons logically
*e.* Has a clear idea of his objectives in teaching
*f.* Writes a good letter of application
*g.* Recognizes and profits by his mistakes
*h.* Has a clear perspective of his work

17. **Leadership**
*a.* Takes a leading part in various social activities of the community
*b.* Develops vigorous pupil organizations
*c.* Influences the pupil by his example in morals, conduct, dress, speech
*d.* Is the sort of person of whom others seek advice
*e.* Is a promoter of any worthy enterprise

18. **Morality** (chastity, sobriety)
*a.* His personal life is honorable
*b.* He upholds the school in its attitude toward drinking, smoking, and questionable amusements
*c.* Lives up to the high moral standards he advocates
*d.* Keeps good company
*e.* Discourages spooning among high-school boys and girls
*f.* Exerts a moral influence on the pupils

19. **Open-mindedness** (broadmindedness)
*a.* Takes suggestions readily for the improvement of his work
*b.* Can see an issue from the pupil's point of view

*c.* Presents both sides of a question
*d.* Shows an interest in other teaching subjects than his own
*e.* Is not quick to take offense
*f.* Does not talk shop to the exclusion of other interests
*g.* Does not patronize other teachers
*h.* Does not bring his religion into classroom discussions
*i.* Does not try to force his ideas upon the students
*j.* Is willing to acknowledge himself in error
*k.* Is not a snob

20. **Poise** (dignity, reserve, self-control, modesty, self-respect)

*a.* Is not easily irritated, embarrassed, or flustered
*b.* Controls his facial expressions
*c.* Controls his temper
*d.* Does not fidget with articles of clothing or jewelry
*e.* Does not talk about himself
*f.* Is not too familiar with pupil
*g.* Is not worried by trivialities
*h.* Is not hurried, yet never wastes time
*i.* Can get out of an awkward situation gracefully

21. **Refinement** (conventionality, mannerliness, courtesy, voice)

*a.* Dresses in accordance with fashion, so that he is not conspicuous
*b.* Has no peculiarities of speech such as " listen," " see "
*c.* His voice is well modulated and pleasant
*d.* Congratulates pupils on honors which they have received
*e.* Talks in a pleasant, deferential way to his superiors
*f.* Does not affect mannerisms that make him conspicuous
*g.* Is a good listener
*h.* Does not gossip about another teacher

22. **Sociability** (magnetism, likeableness)

*a.* Is sociably inclined
*b.* Takes part in the social activities of the faculty group
*c.* Converses easily with any group or individual
*d.* Mixes well with any group
*e.* Has a good time with pupils outside of class
*f.* Commands respect and attracts friendship

*g.* Makes people desire to please him
*h.* Has personal charm of manner
*i.* Visits with all classes of students

23. **Thrift**

*a.* Avoids extravagance
*b.* Is economical and prudent in money matters
*c.* Makes no display of money or costly possessions
*d.* Is careful not to waste school supplies

# APPENDIX J

## Techniques Employed in Constructing the Present Volume

A brief description of the steps taken to prepare the present volume is appended here for the use of other students in applying the same method of attack to a more thorough treatment of the field. The technique used in selecting the 424 teaching difficulties of Part II was determined by the attempt to compromise between a complete list of significant difficulties in high-school teaching and a list sufficiently short for teachers and supervisors to put to practical use. There is urgent need at present for a fundamental study to be used by specialists that shall determine all significant difficulties in the teaching of high-school subjects and evaluate them on the basis of representative returns from teachers of each subject. There is need also for a number of service studies to be used by supervisors and teachers that will present the major difficulties with standard solutions within each subject. These supplementary studies should be made to better advantage if the techniques used in the present study are taken fully into account.

Part II contains a classified list of difficulties reported by high-school teachers, together with solutions proposed for each difficulty. The difficulties are cross-referenced to facilitate the selection of any solutions that apply to a given difficulty. The material is thus essentially a cross-referenced catalog of general methods. It is a source from which teachers may select a variety of general methods applicable to a given classroom problem. Since the methods apply to any high-school subject, those selected to meet a given problem must be specifically adapted to existing classroom conditions by the supervisor or teacher concerned. Certain "procedures for problem solution" are presented to direct the teacher or supervisor in making the specific adaptations.

1. **Collection of difficulties.** The 424 difficulties were collected by means of a standing weekly assignment given to five classes of teachers in training at the University of Pittsburgh over a period of two years. Each student

submitted each week a blank [1] containing brief descriptions of the two most troublesome situations or difficulties arising in his classroom during the preceding week. About three thousand statements of difficulties were collected in this manner. Each teacher submitted also a statement of what was considered to be the best solution for each of the two difficulties reported for the week. The solutions were examined in connection with the difficulties as a means of interpreting them more accurately. The difficulties were collected from approximately two hundred beginning teachers — five successive classes averaging forty students each.

The difficulties were encountered for the most part in the classes of one Pittsburgh high school. This naturally raises the question whether they are sufficiently representative of high school classes in general. The question was checked by comparing the difficulties thus obtained with another list of approximately the same size. The second list was collected from teachers in service, two hundred in number, and distributed among six eastern and middle-western states.[2] The comparison showed that all the *classroom* difficulties reported by teachers in service could be classified according to the type-difficulties derived from the difficulties reported by the beginning teachers. This is not surprising in view of the fact that the difficulties of beginning teachers tend to be more general than those of experienced teachers. The experienced teachers are somewhat better able to analyze difficulties into their specific elements. The collection of data from a single large high school has also a technical advantage. The investigator can deal more intelligently with the data on account of his knowledge of the classroom conditions in which the difficulties are met.

2. **Classification of difficulties.** The statements of difficulties were copied on cards, one card to each statement. The cards were then grouped with reference to the phrase or clause denoting the most significant element in the situation described. This resulted in dividing the statements into six main groups that differed considerably in size. The groups are represented by the six sections into which the difficulties of Part II are classified.

Each of the groups was then examined for duplicates, — a duplicate being defined as a statement of a difficulty that is identical with another state-

[1] For a specimen of this blank see Douglas Waples, "A Device for the Student Teaching Conference," *Educational Administration and Supervision*, December, 1924.

[2] Representative sections of this list may be found in the *Journal of Educational Research*, April 1925 (XI: 254–268).

ment in respect to the teacher's objectives implied, the type of subject matter, the grade taught (where the grade is significant), and the major teaching activities involved. The elimination of duplicates, as thus defined, reduced the total number of statements to a working basis of approximately six hundred. By eliminating the difficulties peculiar to certain subjects, the number was further reduced to the 424 difficulties shown in Part II.

One reason for the large shrinkage is that only *classroom* difficulties were encountered by the student-teachers. The omission of the many difficulties in connection with *extra*-classroom problems tended greatly to restrict the range of the difficulties reported and hence to increase the proportion of duplicates. Another reason for the many duplicates is that the student teachers were equally inexperienced. The difficulties reported were accordingly more general and less fully analyzed than the difficulties reported by teachers of greater experience. This fact again tended to reduce the number of distinct difficulties. It also tends to define type-difficulties that are relatively constant and met by the large majority of high-school teachers.

The difficulties were then sub-classified into sixty-nine groups. The groups were determined by drawing out the " type-"difficulties under which certain others could readily be classified. The remaining difficulties were then classified under some one or more of the sixty-nine types. The purpose of this step was to define a smaller number of the more significant difficulties in terms of which the entire list might be handled more conveniently. It was hoped that the definition of type-difficulties might constitute a basis for the analysis of any classroom problem on the high-school level. This hope has been largely justified by the use that teachers in service have made of the type-difficulties in the solutions of actual classroom problems.[1]

3. **Cross references.** Considerable study of methods by which teaching activities may be classified has emphasized an interesting fact that applies to any data concerning personal relationships. The fact is that any set of items classified under a given heading approximates a normal variation from the literal meaning of the heading. If activities involving teachers' traits, for example, are classified under " teachers' traits," the data will vary from items like " being cheerful " or " being courteous," which are clearly traits, to such an item as " relieving the pupils' boredom by introducing enjoyable exercises " which only involves the trait by implication.

[1] For illustration see the case problems of Part I.

The principle of normal variation applies as well to activities that are analyzed to the fullest degree of detail. It is never possible to classify teachers' activities under headings that do not somewhat overlap. Furthermore, it is not desirable to do so. Accurate classification becomes possible to the extent that data are reduced to specific or verbal elements, as when solids, liquids, and gases are reduced to chemical elements and classified under the single word by which each element is defined. But by reducing data to their elements they are so changed in character that their original properties are lost. Hydrogen and oxygen, when separated, do not satisfy thirst and are not recognized as water.

This principle bears a useful application to the analysis of teaching difficulties, as distinct from teaching activities. The full flavor of the difficulty is lost when the situation is analyzed and its elements separated. In classifying difficulties it is thus important to retain the significance of the classroom situation at any cost to the logical character of the classification. When difficult situations containing a common element are classified according to that element, the significance of the difficulties is retained but the classification is inadequate. If, however, each of the significant elements is used as a heading and if each situation as a whole is classified under as many different headings as possible, both requirements are met. The significance of the situation confronting the teacher is preserved. The classification is also sufficiently complete to cover the data to any desired degree of detail. The cross references found in the footnotes concerning the type-difficulties in Part II are accordingly a necessary part of the classification. They show what type-difficulties have common elements on the basis of the situations reported.

The method of selecting the cross references is simple to apply to any classified list of difficulties.[1] As indicated in the preceding paragraph, the purpose of the cross references is to show what type-difficulties tend to combine in functional groups. The functional groups were determined on the basis of the classroom situations in terms of which the difficulties were originally reported.

The cross references shown on the table, page 548, were determined as follows:

*a*. Each of the 424 situations retained in the analysis was indexed according to that one of the sixty-nine type-difficulties it seemed best to illustrate.

[1] It is not, however, easy to explain, without more illustration than is here appropriate. Chapter I explains the *use* of the cross references.

The following example may explain: "Three bright boys in my tenth-grade chemistry class are extremely careless in writing up notebooks. In fact, all their written work is untidy. They are interested in classwork and accomplish good results in both class and laboratory exercises. In all other respects their attitude is excellent, but they refuse to try to make their written work neat. It is hard to be fair in grading their papers." This situation was indexed Section IV, Type E — "Developing carefulness in written work." Six other situations (making seven in all) were indexed according to the same type-difficulty; namely, IV. E. Each of the 424 situations was thus located under some one of the sixty-nine types, and each type-difficulty covered several situations.

*b.* Each of the 424 situations was then checked against each of the remaining sixty-eight type-difficulties. Whenever a given situation was found to contain an element covered by some other type-difficulty than the one under which it was indexed, the other type-difficulty or type-difficulties were listed for that situation. For example, the situation quoted in the above paragraph was found to contain five other elements than the one by which it was indexed: namely, II. H. Conducting written exercises; III. J. Directing use of notebooks; IV. A. Developing a coöperative attitude; V. C. Dealing with bright but lazy pupils; and VI. F. Developing a sense of justice. These five type-difficulties were accordingly listed for this situation. The same process was applied to each of the 424 situations. Hence a number of the type-difficulties were listed for each situation.

The result of the first step described was a series of 424 situations, each classified according to some one of the sixty-nine type-difficulties. The type-difficulties thus form one basis of classification. The result of the second step was a list of the type-difficulties related to each of the 424 situations. The situations thus form a second basis of classification.

*c.* The next step was to combine the results of the two classifications by listing all the type-difficulties related to the situations classified under any one type-difficulty. For example, the type-difficulty IV. E. "How to develop carefulness in written work" covers seven situations. Each of these situations is related, as described in paragraph *b*, to various other type-difficulties. The combined list thus contains all type-difficulties related to any one of the seven situations covered by type-difficulty IV. E. The combined list would accordingly represent all of the type-difficulties that have to do with the development of carefulness in written work.

*d.* A count was then made of the number of times each type-difficulty occurred in each of the combined lists. The combined list of type-difficulties related to type-difficulty IV. E., for example, contained fifteen type-difficulties. Of these fifteen, six occurred only once in the situations classified under IV. E. — "How to develop carefulness in written work"; three occurred twice, three occurred four times, two occurred six times, and one occurred seven times — in the seven situations classified under this type-difficulty. Thus with each of the type-difficulties as a base, the frequency of its relation to other type-difficulties was determined. The total number of relations so determined between any one type-difficulty and some other type-difficulty may be called the "relation index."

Showing cross references to type-difficulties lying wholly within Section 1 of the Analysis.

| Section I | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | A | | | | | | | | | | |
| B | 3/4 | B | | | | | | | | | |
| C | 4/37 | 5/15 | C | | | | | | | | |
| D | 5/3 | 5/1 | 38/7 | D | | | | | | | |
| E | 4/5 | 3/6 | 27/6 | 6/3 | E | | | | | | |
| F | 5/4 | 3/2 | 27/1 | 1/3 | 5/2 | F | | | | | |
| G | 4/3 | 4/1 | 39/1 | 7/3 | 6/4 | 4/2 | G | | | | |
| H | 5/2 | | | 6/2 | 6/2 | 4/1 | 3/2 | H | | | |
| I | 3/1 | 2/1 | 41/4 | 8/2 | 7/4 | | 4/4 | 2/2 | I | | |
| J | 4/13 | 5/1 | 24/14 | 4/8 | 7/9 | 3/2 | 4/15 | 2/14 | 3/7 | J | |
| K | | 3/1 | 19/10 | 2/7 | 3/4 | 2/3 | | | | 1/5 | K |

*e.* The relation indices for each type-difficulty to the other sixty-eight type-difficulties were then tabulated on a correlation table. For most practical purposes the index thus obtained is sufficient to indicate the difficulties that are found together in typical classroom situations. In deriving the cross references shown on page 548, however, additional steps were taken to increase the reliability of the selection.

*f.* It will be noted that the relation index as above described provides only for the frequency with which the situations classified under any one type-difficulty are related to other *type-difficulties*. It does not provide for the reverse relation. That is to say, the index shows, for example, that the situations of type-difficulty I. A. are related to type-difficulty I. B. three times. The index does not show how many times the situations of I. B. are related to type-difficulty I. A., which happen to be four times. The next step was accordingly to determine the index again for each type-difficulty on the basis of the situations listed under other type-difficulties. The two indices were then plotted on a correlation table of which a part is reproduced below. The numerators of each ratio show the relation index as determined by the situations listed under the type-difficulty at the left of the line. The denominators show the relation as determined by the situations listed under the type-difficulties at the top of the column. The two indices in combination thus show the frequency of relationship between any two type-difficulties more accurately than either index alone.

*g.* The significant relationships that appear on the table of page 548, were selected from the ratios somewhat arbitrarily. Medians were found for the numerators of each column and also for the denominators of each column. Ratios were then selected as significant when both numerator and denominator were as large as the median numerator and denominator, respectively, for the given column. The other ratios were disregarded. The ratios selected are thus believed to indicate significant and functional relations between the type-difficulties shown.

4. **Collection of solutions.** The " solutions " proposed for the difficulties listed in Part II were obtained from three sources; namely, professional literature, under-graduate students enrolled in practice teaching courses, and experienced teachers enrolled in graduate courses. While some effort was made to obtain as much useful material as possible from each source, the criteria for " usefulness " are largely subjective. Final selection from the solutions collected was based to some slight extent upon the frequency with which the same solution was obtained from each source. Yet when-

ever the more frequent solutions impressed the writer as inadequate, he did not hesitate to substitute solutions believed to be superior without regard to frequency. Thus the solutions do not accurately represent the typical contributions from any one of the sources. They do, however, contain what the writer considers to be the best suggestions obtained from all three sources. Inasmuch as solutions were collected in all from more than one thousand students, who were either experienced high-school teachers or actually engaged in teaching under supervision, many specific suggestions were obtained that cannot readily be found in any one of the sources alone. It is unfortunate, from the standpoint of technical considerations, that the solutions applying exclusively to single subjects had to be omitted. The more specific solutions naturally were restricted to particular subjects. Yet to have included such specific solutions would have increased the contents of Part II to three or four times the present size and hence would have rendered them much less useful to the teachers of any one subject. It was accordingly decided to include only the solutions that apply to all subjects, leaving the collecting of solutions for the difficulties of each subject to be undertaken by experts in each field.

Solutions from the literature were obtained by college seniors and graduate students enrolled in courses on high-school method under the writer's direction.[1] Some four hundred and fifty students collaborated during a period of three years, — two hundred and ten graduates and two hundred and forty seniors. The procedure was as follows. The difficulties, together with as useful bibliographies as the writer could compile, were assigned to classes having access to libraries that contained virtually all the material cited by the bibliographies. The assignments were of two kinds. To the seniors, the difficulties were assigned by sections, all members of the class working on the same difficulties at the same time. The graduate students selected from the list the difficulties that each had found troublesome in his previous teaching experience. Both groups were asked to record suggestions found in the literature that might be applied to the solution of the particular difficulties as met in the teaching of some particular subject. The references consulted are shown in the bibliographies for each section.

Solutions were then obtained from practice teachers themselves, both by means of group conferences and by correspondence. The group conference

[1] At the University of Pittsburgh, University of Chicago, and Columbia University (Summer Session).

method consisted in the discussion of certain of the difficulties met in practice by the students teaching the same subject. The solutions found acceptable to the groups were submitted in the form of weekly reports. Approximately one hundred and fifty students helped in this way, and contributed some two hundred and ten reports.

The solutions obtained from practice teachers by correspondence were reported individually. Ten colleges and universities conducting courses in practice teaching[1] agreed to request classes of practice teachers to submit solutions for the designated sixty-nine type-difficulties. The solutions were reported on a uniform blank. The face of the blank called for a detailed description of an actual classroom situation, met or observed, that illustrated a given type-difficulty. The reverse of the blank called for a list of methods that in the student's opinion might be successfully applied to the difficulty. The student's name, the subject taught, and the grade in which the difficulty occurred were also recorded. Each student copied about ten difficulties from dictation and was given one week in which to formulate solutions. In all, approximately 2,440 solutions were returned for the 69 difficulties by about 370 students. Of these solutions 24 per cent applied to the difficulties of Division I, 31 per cent to those of Division II, 9 per cent to Division III, 23 per cent to Division IV, 10 per cent to Division V, and 3 per cent to Division VI.

Since the practice teachers making the returns had in most cases received specific instruction in the solution of similar difficulties, the solutions reported probably represent what the students had been taught. The effect of instruction in principles of high-school teaching was most apparent in the solutions reported for Divisions I, II, and IV (Subject Matter, Methods, and Motivation). In general, the solutions for these sections were both more numerous and more formal. Solutions reported for the difficulties of the other divisions were correspondingly fewer and less adequate, since difficulties in the mechanics of class management, problems involving pupils' traits, and problems involving teachers' traits receive less attention in the literature and in courses on high-school methods. The solutions obtained from practice teachers were chiefly valuable as evidence concerning the type of solution considered most useful by beginning teachers.

[1] University of Chicago, University of Cincinnati, University of Colorado, College of the City of New York, Geneva College, University of Missouri, Ohio State University, Ohio Wesleyan University, Leland Stanford University, and the University of Pittsburgh.

Solutions were obtained from 150 graduate students by a procedure that combined the procedures described. Each student was asked to select from the list the difficulties met in service, to examine the literature for solutions, to interview other teachers of the same subject, and to check the solutions found, where possible, by applying them to a high-school class. The "procedures for problem solution" described in Chapter II, for the guidance of teachers in adapting Part II to their own needs were developed largely by this sort of informal experiment.

5. **Procedures for problem solution.** The "procedures for problem solution" were developed largely as group projects. Procedure B on page 53 ff. may be used for illustration. The other procedures were developed in much the same way. First, a tentative procedure for the solution of any classroom problem was drafted as a basis for experiment. This procedure contained five steps, each of which appeared necessary in analyzing a classroom situation and finding solutions for it. The steps in brief were *a*. defining the problem in general, *b*. selecting specific points of greatest difficulty, *c*. consulting other teachers, *d*. consulting the literature, and *e*. applying the suggestions found.

This list of steps was outlined in considerably greater detail and submitted to the members of six successive graduate courses in high-school method. The work of the courses consisted in the investigation of problems that the individual students had met in their teaching experience. Each student was asked to use the steps outlined for what they were worth, and to keep a running record of steps to be added and of steps found unnecessary. The outline was revised three times on the basis of such records. The third revision is similar to Procedure B (page 53 ff.).

When the contents of Part II had been organized in something like their present form, the material was mimeographed and placed in the hands of seventy-five experienced teachers attending summer school.[1] The revised procedures for problem solution were then submitted for use in connection with the contents of Part II in mimeographed form. The six sections of Part II were taken up in order during the six weeks of the summer session. The students collected solutions for selected problems in each section with the aid of the revised procedures. At the end of the course each student was asked to criticize the procedures in the light of his experience. The criticism consisted in listing the steps in order of value, listing the unnec-

[1] Teachers College, Columbia University (Summer Session 1926).

essary steps with comment, and proposing new steps with brief explanation. About fifty of these criticisms were found useful. The type procedures applying to the problems of each chapter represent final revisions on the basis of the teachers' criticisms. The case problems also were obtained from the situations to which the procedures were applied.

# APPENDIX K

## Ratings of Type-Difficulties by Subjects [1]

The data herein shown are significant merely in that they serve to illustrate a technique. Since the ratings were obtained from only ninety-seven teachers, the variability of individual experience in teaching obscures whatever effects upon the rankings may be traceable to the nature of the subject matter taught.

Ratings may, of course, be readily collected from any desired number of experienced high-school teachers. Yet the largest single factor in the variability of such ratings would be the lack of agreement on the part of the teachers as to the specific interpretation of the difficulties. In the ninety-seven rankings used in the following tables, this factor has been largely eliminated. All the rankings were made at the close of a full week's discussion of the difficulties contained in a single section of Part II by the teachers submitting the rankings.

From the standpoint of technique the data are significant in that (1) they indicate a method of determining the relative importance of the difficulties for the teachers of any given department, (2) they suggest a method of distinguishing the fields of special method from general method by determining the type-difficulties that are common to all subjects and those that have peculiar importance to the teachers of some one subject, and (3) they afford some basis for investigations to determine the correlation between ratings of teachers and supervisors. Such correlations may well reveal difficulties in teaching that are due rather to the teacher's personal limitations than to the difficulties inherent in the given subject matter or the methods used.

1. **Data blank.** — The data shown in Tables IV, V, and VI were obtained by means of the following blank from experienced teachers attending summer school by whom the type-difficulties had just been studied.

[1] The data herein presented were prepared by E. L. Walters, Director of Training, State Normal School, La Crosse, Wisconsin.

NAME _____ _____

DATE _____

SCHOOL ADDRESS: (Post Office where teaching) _____

1. What subjects have you taught in grades 7 to 12? (Check those you have taught and underline one to be used as basis for rating below.)
   (*a*) Principal _____
   (*b*) English Literature _____
   (*c*) English Composition _____
   (*d*) Foreign Languages _____
   (*e*) Social Studies _____ (Geography, Sociology, Economics, Civics, and History)
   (*f*) Mathematics _____
   (*g*) Natural Sciences _____
   (*h*) Practical Arts _____

2. Check your total years of experience in teaching grades 7–12.
   (*a*) None _____
   (*b*) 1–2 _____
   (*c*) 3–4 _____
   (*d*) 5 or more _____

3. Professional Training: How many courses in Education have you completed? _____

4. Directions for rating difficulties on attached list:
   (1) Rate the items on the basis of the *one* subject underlined in 1 above and on the basis of your personal experience in teaching this subject.
      Name of subject (from above list) _____
      Grade _____
   (2) If you rate the items from the standpoint of the school principal, rate on basis of frequency of items as sources of difficulty for the teachers under your supervision.
   (3) RATING SCHEME:
      (*a*) Mark (−), minus sign, items that demand little or no attention or particular effort on your part.
      (*b*) Mark (+), plus sign, items that demand close attention and are *real* difficulties.
      (*c*) Leave blank all other items or those that fall between the two above classifications — these represent items that occasionally give *some* trouble.
      (*d*) Draw a circle around items with (+), plus sign, if you feel the difficulty there is found in all such teaching situations and is *not* due to the peculiar nature of the subject in which your rating is made.

***Ask about any point not clear before you commence checking the sheets attached.***

## List of Type-Difficulties

### *Section I*

Mark here

..... 1. How to know the subject well enough to teach it.
..... 2. How to introduce the course or any new material.
..... 3. How to adapt the subject matter to the needs of pupils.
..... 4. How to assign subject matter for study.
..... 5. How to make subject matter coherent for the pupils.
..... 6. How to select interesting and appropriate collateral readings.
..... 7. How to use concrete examples instead of abstract rules.
..... 8. How to supplement the text by oral explanation and other readings where necessary.
..... 9. How to emphasize subject matter needed by a few pupils only.
..... 10. How to explain subject matter clearly.
..... 11. How to present subject matter so that pupils will form sincere appreciations of it.

### *Section II*

..... 12. How to plan what pupils should do to learn the subject matter of the course.
..... 13. How to direct pupils' thinking by questioning.
..... 14. How to treat pupils' statements in a manner helpful to other pupils.
..... 15. How to encourage pupils to criticize unsound statements.
..... 16. How to keep pupils' oral and written discussion to the point.
..... 17. How to make pupils' oral reports contribute to the class work.
..... 18. How to make oral recitations and exercises as helpful as possible.
..... 19. How to provide written exercises which stimulate and direct the pupils' learning.
..... 20. How to make vocabulary study efficient.
..... 21. How to teach pupils to interrelate the different parts of the course.
..... 22. How to supervise and direct pupils' study.
..... 23. How to make explanations adequate but not excessive.
..... 24. How to teach pupils to organize their work by outlining.

Mark here

..... 25. How to conduct drill work efficiently.
..... 26. How to conduct effective reviews.
..... 27. How to prepare appropriate tests.

*Section III*

..... 28. How to improve the teacher's use of English.
..... 29. How to learn pupils' names quickly.
..... 30. How to begin the work of the period promptly.
..... 31. How to secure the attention, effort, and order of the class by questioning.
..... 32. How to direct individual work during the class period most efficiently for all concerned.
..... 33. How to provide classroom supplies efficiently.
..... 34. How to determine the best time during the period to make a particular assignment.
..... 35. How to improve pupils' English, as a problem in class management.
..... 36. How to administer pupils' oral reports to prevent loss of time and attention.
..... 37. How to establish an efficient routine for pupils' notebooks.
..... 38. How to administer and supervise group tests.
..... 39. How to mark papers and oral exercises.
..... 40. How to correct papers efficiently.

*Section IV*

..... 41. How to establish a coöperative attitude on the part of the class.
..... 42. How to secure and hold pupils' attention.
..... 43. How to develop pupils' initiative.
..... 44. How to make courtesy habitual in a given class.
..... 45. How to develop pupils' carefulness in written work.
..... 46. How to discourage ungrammatical speech.
..... 47. How to train pupils to submit papers when due.
..... 48. How to reduce unnecessary absences.
..... 49. How to check or prevent class disorder.
..... 50. How to prevent dishonesty in pupils' work.

*Section V*

Mark here

..... 51. How to help pupils overcome timidity.
..... 52. How to deal with the over-zealous pupil.
..... 53. How to direct pupils who are bright but lazy.
..... 54. How to stimulate pupils who are dull and lazy.
..... 55. How to help pupils who are conscientious but dull.
..... 56. How to deal with pupils who are bright but dishonest.
..... 57. How to direct pupils whose abilities are uneven.
..... 58. How to deal with clowns and humorists.
..... 59. How to avoid personal antagonisms among pupils.
..... 60. How to deal with inappropriate references to sex.
..... 61. How to deal with pupils with personal peculiarities.

*Section VI*

..... 62. How to develop the teacher's self-confidence.
..... 63. How to exercise proper authority.
..... 64. How to show proper friendliness to pupils.
..... 65. How to express "righteous indignation."
..... 66. How to develop interest in pupils' personalities.
..... 67. How to develop a sense of justice.
..... 68. How to cultivate a sense of humor.
..... 69. How to share interest in the subject with pupils.

**2. Rankings of 69 type difficulties by 97 experienced teachers**

TABLE V

($S$ = Rank by Section and $W$ = Rank by Whole)

| No. of Type-Difficulty | Principals ($N=11$) | | Social Science ($N=18$) | | Natural Science ($N=17$) | | Foreign Languages ($N=7$) | |
|---|---|---|---|---|---|---|---|---|
| | $S$ | $W$ | $S$ | $W$ | $S$ | $W$ | $S$ | $W$ |
| Section I | | | | | | | | |
| 1 | 11. | 61. | 6. | 14. | 8. | 58.5 | 11. | 65. |
| 2 | 6.5 | 26.5 | 3. | 5.5 | 4.5 | 19. | 3.5 | 22.5 |
| 3 | 1. | 2. | 1. | 1. | 1. | 5. | 2. | 12. |
| 4 | 5. | 16. | 4.5 | 8.5 | 4.5 | 19. | 3.5 | 22.5 |
| 5 | 3.5 | 13. | 7.5 | 19.5 | 2.5 | 11. | 6. | 31.5 |
| 6 | 8. | 42.5 | 4.5 | 8.5 | 6.5 | 27.5 | 9. | 54. |
| 7 | 6.5 | 26.5 | 10. | 38.5 | 10.5 | 66.5 | 6. | 31.5 |
| 8 | 9.5 | 29.5 | 9. | 25. | 9. | 63. | 10. | 57. |
| 9 | 3.5 | 13. | 2. | 2. | 2.5 | 11. | 1. | 6.5 |
| 10 | 9.5 | 49.5 | 11. | 41. | 10.5 | 66.5 | 8. | 44.5 |
| 11 | 2. | 3.5 | 7.5 | 19.5 | 6.5 | 27.5 | 16. | 31.5 |
| Section II | | | | | | | | |
| 12 | 7. | 26.5 | 2. | 8.5 | 8. | 27.5 | 9.5 | 17.5 |
| 13 | 4.5 | 19. | 4. | 16.5 | 3. | 5. | 2. | 3. |
| 14 | 13.5 | 49.5 | 9.5 | 25. | 4.5 | 11. | 11. | 57. |
| 15 | 4.5 | 19. | 5. | 19.5 | 1.5 | 2. | 15.5 | 50. |
| 16 | 15. | 54. | 7. | 24. | 12.5 | 45. | 13. | 44.5 |
| 17 | 11.5 | 42.5 | 9.5 | 25. | 4.5 | 11. | 15. | 50. |
| 18 | 7. | 26.5 | 7. | 24. | 9.5 | 36. | 6. | 12. |
| 19 | 9.5 | 35. | 3. | 14. | 6.5 | 19. | 6. | 12. |
| 20 | 13.5 | 49.5 | 15. | 56. | 16. | 69. | 6. | 12. |
| 21 | 9.5 | 35. | 7. | 24. | 6.5 | 19. | 2. | 3 |
| 22 | 1. | 1. | 1. | 3.5 | 1.5 | 2. | 6. | 12. |
| 23 | 11.5 | 42.5 | 14. | 50. | 15. | 53. | 13. | 44.5 |
| 24 | 16. | 61. | 11.5 | 35. | 12.5 | 45. | 13. | 44.5 |
| 25 | 7. | 26.5 | 16. | 62.5 | 9.5 | 36. | 9.5 | 17.5 |
| 26 | 3. | 13. | 13. | 44. | 12.5 | 45. | 6. | 12. |
| 27 | 2. | 3.5 | 11.5 | 35. | 12.5 | 45. | 2. | 3. |

TABLE V (*Continued*)

| No. of Type-Difficulty | Principals ($N=11$) | | Social Science ($N=18$) | | Natural Science ($N=17$) | | Foreign Languages ($N=7$) | |
|---|---|---|---|---|---|---|---|---|
| | *S* | *W* | *S* | *W* | *S* | *W* | *S* | *W* |
| Section III | | | | | | | | |
| 28 | 12. | 67. | 10. | 53.5 | 10.5 | 58.5 | 9.5 | 50. |
| 29 | 13. | 69. | 13. | 69. | 12.5 | 63. | 12. | 65. |
| 30 | 9.5 | 61. | 11.5 | 67. | 12.5 | 63. | 12. | 65. |
| 31 | 5.5 | 35. | 5. | 35. | 6.5 | 36. | 7. | 31.5 |
| 32 | 1.5 | 7. | 1. | 8.5 | 1. | 5. | 1. | 3. |
| 33 | 7. | 54. | 11.3 | 67. | 8.5 | 45. | 12. | 65. |
| 34 | 9.5 | 61. | 8.5 | 50. | 3.5 | 19. | 7. | 31.5 |
| 35 | 5.5 | 35. | 3. | 24. | 3.5 | 19. | 7. | 31.5 |
| 36 | 9.5 | 61. | 2. | 11.5 | 2. | 11. | 9.5 | 50. |
| 37 | 9.5 | 61. | 4. | 31.5 | 8.5 | 45. | 4.5 | 22.5 |
| 38 | 1.5 | 7. | 7. | 46.5 | 6.5 | 36. | 4.5 | 22.5 |
| 39 | 3. | 13. | 8.5 | 50. | 10.5 | 58.5 | 2.5 | 12. |
| 40 | 4. | 19. | 6. | 44. | 5. | 27.5 | 2.5 | 12. |
| Section IV | | | | | | | | |
| 41 | 2. | 7. | 3. | 24. | 5.5 | 36. | 1. | 6.5 |
| 42 | 8.5 | 42.5 | 5. | 38.5 | 7.5 | 45. | 4.5 | 31.5 |
| 43 | 2. | 7. | 1. | 5.5 | 2.5 | 11. | 2.5 | 22.5 |
| 44 | 10. | 54. | 6. | 41. | 7.5 | 45. | 7. | 39. |
| 45 | 4. | 19. | 2. | 19.5 | 1. | 2. | 4.5 | 31.5 |
| 46 | 7. | 35. | 4. | 25. | 4. | 27.5 | 7. | 39. |
| 47 | 8.5 | 42.5 | 8.5 | 50. | 5.5 | 36. | 9. | 44.5 |
| 48 | 5.5 | 26.5 | 10. | 59.5 | 9. | 53. | 2.5 | 22.5 |
| 49 | 5.5 | 26.5 | 8.5 | 50. | 10. | 66.5 | 10. | 60. |
| 50 | 2. | 7. | 7. | 44. | 2.5 | 11. | 7. | 39. |
| Section V | | | | | | | | |
| 51 | 11. | 67. | 8. | 41. | 9. | 53. | 7. | 39. |
| 52 | 9. | 61. | 4. | 16.5 | 6. | 36. | 5.5 | 31.5 |
| 53 | 2. | 13. | 2. | 11.5 | 4. | 27.5 | 3.5 | 22.5 |
| 54 | 3.5 | 26.5 | 3. | 14. | 1.5 | 11. | 2. | 12. |
| 55 | 3.5 | 26.5 | 5. | 31.5 | 4. | 27.5 | 3.5 | 22.5 |
| 56 | 7. | 49.5 | 6.5 | 35. | 4. | 27.5 | 9. | 54. |
| 57 | 1. | 7. | 1. | 3.5 | 1.5 | 11. | 1. | 3. |
| 58 | 5. | 35. | 10. | 59.5 | 7.5 | 45. | 10. | 65. |
| 59 | 9. | 61. | 9. | 56. | 11. | 66.5 | 8. | 44.5 |
| 60 | 9. | 61. | 11. | 64.5 | 10. | 58.5 | 11. | 69. |
| 61 | 6. | 42.5 | 6.5 | 35. | 7.5 | 45. | 5.5 | 31.5 |

TABLE V (*Continued*)

| No. of Type-Difficulty | Principals ($N=11$) | | Social Science ($N=18$) | | Natural Science ($N=17$) | | Foreign Languages ($N=7$) | |
|---|---|---|---|---|---|---|---|---|
| | *S* | *W* | *S* | *W* | *S* | *W* | *S* | *W* |
| Section VI | | | | | | | | |
| 62 | 4.5 | 42.5 | 1. | 46.5 | 2.5 | 27.5 | 7.5 | 65. |
| 63 | 7.5 | 61. | 2. | 53.5 | 1. | 19. | 5.5 | 60. |
| 64 | 4.5 | 42.5 | 8. | 67. | 5.5 | 53. | 5.5 | 60. |
| 65 | 7.5 | 61. | 4.5 | 59.5 | 5.5 | 53. | 3.5 | 57. |
| 66 | 3. | 35. | 6. | 62.5 | 2.5 | 27.5 | 2. | 54. |
| 67 | 1. | 19. | 4.5 | 59.5 | 7.5 | 58.5 | 1. | 50. |
| 68 | 6. | 49.5 | 7. | 64.5 | 7.5 | 58.5 | 3.5 | 57. |
| 69 | 2. | 26.5 | 3. | 56. | 4. | 45. | 7.5 | 65. |

| No. of Type-Difficulty | English Literature ($N=19$) | | English Composition ($N=19$) | | Mathematics ($N=17$) | | Practical Arts ($N=8$) | |
|---|---|---|---|---|---|---|---|---|
| | *S* | *W* | *S* | *W* | *S* | *W* | *S* | *W* |
| Section I | | | | | | | | |
| 1 | 4. | 28.5 | 6. | 31. | 8.5 | 41.5 | 9. | 63. |
| 2 | 6.5 | 38.5 | 4.5 | 25 | 4.5 | 13.5 | 5. | 38. |
| 3 | 1.5 | 6. | 3. | 1 | 1. | 2. | 1. | 6.5 |
| 4 | 6.5 | 38.5 | 7. | 35.5 | 10. | 48. | 5. | 38. |
| 5 | 8. | 44.5 | 4.5 | 25. | 4.5 | 13.5 | 11. | 67. |
| 6 | 5. | 30. | 10.5 | 60. | 8.5 | 41.5 | 9. | 63. |
| 7 | 11. | 66.5 | 9. | 51.5 | 7. | 37.5 | 5. | 38. |
| 8 | 9. | 49.5 | 10.5 | 60. | 11. | 51. | 9. | 63. |
| 9 | 3. | 15. | 2. | 5. | 2.5 | 8.5 | 2. | 12. |
| 10 | 10. | 61. | 8. | 44.5 | 6. | 31. | 7. | 48. |
| 11 | 1.5 | 8.5 | 3. | 17.5 | 2.5 | 8.5 | 3. | 19.5 |

TABLE V (*Continued*)

| No. of Type-Difficulty | English Literature ($N=19$) | | English Composition ($N=19$) | | Mathematics ($N=17$) | | Practical Arts ($N=8$) | |
|---|---|---|---|---|---|---|---|---|
| | *S* | *W* | *S* | *W* | *S* | *W* | *S* | *W* |
| Section II | | | | | | | | |
| 12 | 6. | 15. | 3.5 | 11.5 | 3.5 | 13.5 | 4.5 | 19.5 |
| 13 | 4.5 | 11. | 1.5 | 8. | 1.5 | 8.5 | 11.5 | 38. |
| 14 | 9. | 24. | 6. | 17.5 | 14.5 | 48. | 16. | 69. |
| 15 | 1.5 | 6. | 9.5 | 25. | 8.5 | 25. | 4.5 | 19.5 |
| 16 | 13.5 | 33. | 9.5 | 25. | 14.5 | 48. | 14. | 48. |
| 17 | 13.5 | 33. | 12. | 31. | 11.5 | 41.5 | 11.5 | 38. |
| 18 | 9. | 24. | 1.5 | 8. | 6.5 | 19.5 | 8. | 28. |
| 19 | 9. | 24. | 6. | 17.5 | 3.5 | 13.5 | 8. | 28. |
| 20 | 4.5 | 11. | 3.5 | 11.5 | 16. | 63. | 15. | 56. |
| 21 | 9. | 24. | 9.5 | 25. | 6.5 | 19.5 | 11.5 | 38. |
| 22 | 3. | 8.5 | 6. | 17.5 | 8.5 | 25. | 4.5 | 19.5 |
| 23 | 15. | 56.5 | 14. | 35.5 | 10. | 37.5 | 11.5 | 38. |
| 24 | 9. | 24. | 14. | 35.5 | 11.5 | 41.5 | 1.5 | 12. |
| 25 | 16. | 65. | 16. | 39.5 | 1.5 | 8.5 | 4.5 | 19.5 |
| 26 | 12. | 33. | 14. | 35.5 | 5. | 16.5 | 8. | 28. |
| 27 | 1.5 | 6. | 9.5 | 25. | 13. | 45. | 1.5 | 12. |
| Section III | | | | | | | | |
| 28 | 10. | 61. | 7. | 51.5 | 8. | 54.5 | 8. | 48. |
| 29 | 12.5 | 68.5 | 13. | 69. | 13. | 68. | 5.5 | 38. |
| 30 | 11. | 66.5 | 12. | 68. | 10.5 | 65.5 | 8. | 48. |
| 31 | 6. | 38.5 | 6. | 44.5 | 3. | 31. | 2. | 12. |
| 32 | 1. | 2. | 1. | 1. | 1. | 4.5 | 1. | 2. |
| 33 | 12.5 | 68.5 | 11. | 67. | 12. | 67. | 11.5 | 56. |
| 34 | 58.5 | 56.5 | 9.5 | 60. | 9. | 58.5 | 11.5 | 56. |
| 35 | 5. | 33. | 2. | 11.5 | 2. | 19.5 | 11.5 | 56. |
| 36 | 3. | 15. | 4. | 25. | 4.5 | 45. | 11.5 | 56. |
| 37 | 8.7 | 56.5 | 8. | 48. | 18.5 | 65.5 | 3. | 19.5 |
| 38 | 7.5 | 53. | 9.5 | 60. | 6.5 | 51. | 4. | 28. |
| 39 | 2. | 11. | 4. | 25. | 6.5 | 51. | 8. | 48. |
| 40 | 4. | 24. | 4. | 25. | 4.5 | 45. | 5.5 | 38. |

TABLE V (*Continued*)

| No. of Type-Difficulty | English Literature $N=19$ | | English Composition $N=19$ | | Mathematics $N=17$ | | Practical Arts $N=8$ | |
|---|---|---|---|---|---|---|---|---|
| | *S* | *W* | *S* | *W* | *S* | *W* | *S* | *W* |
| Section IV | | | | | | | | |
| 41 | 8. | 42. | 7. | 41. | 5. | 31. | 2. | 12. |
| 42 | 7. | 38.5 | 8. | 44.5 | 2. | 16.5 | 7.5 | 38. |
| 43 | 1.5 | 18.5 | 5.5 | 35.5 | 1. | 3. | 1. | 4.5 |
| 44 | 6. | 33. | 4. | 31. | 7. | 37.5 | 3. | 19.5 |
| 45 | 3. | 20. | 1. | 2. | 3. | 22.5 | 5. | 28. |
| 46 | 1.5 | 18.5 | 2. | 14. | 5. | 31. | 9. | 48. |
| 47 | 5. | 28.5 | 5.5 | 35.5 | 8.5 | 58.5 | 7.5 | 38. |
| 48 | 10. | 53. | 10. | 64. | 10. | 61. | 5. | 28. |
| 49 | 9. | 49.5 | 9. | 51.5 | 8.5 | 58.5 | 5. | 28. |
| 50 | 4. | 24. | 3. | 17.5 | 5. | 31. | 10. | 68. |
| Section V | | | | | | | | |
| 51 | 6.5 | 38.5 | 7.5 | 44.5 | 6. | 25. | 8.5 | 48. |
| 52 | 8. | 44.5 | 7.5 | 44.5 | 5. | 22.5 | 10.5 | 63. |
| 53 | 3. | 4. | 4. | 11.5 | 3.5 | 8.5 | 3. | 4.5 |
| 54 | 1.5 | 2. | 1.5 | 5. | 3.5 | 8.5 | 1.5 | 2. |
| 55 | 4.5 | 15. | 3. | 8. | 2. | 4.5 | 5. | 8. |
| 56 | 4.5 | 15. | 1.5 | 5. | 7. | 31. | 8.5 | 48. |
| 57 | 1.5 | 2. | 5. | 17.5 | 1. | 1. | 1.5 | 2. |
| 58 | 9. | 49.5 | 9. | 56. | 9. | 58.5 | 6. | 12. |
| 59 | 10. | 61. | 10.5 | 64. | 10.5 | 63. | 7. | 19.5 |
| 60 | 11. | 64. | 10.5 | 64. | 10.5 | 63. | 10.5 | 63. |
| 61 | 6.5 | 38.5 | 6. | 39.5 | 8. | 54.5 | 4. | 6.5 |
| Section VI | | | | | | | | |
| 62 | 3. | 47. | 4. | 51.5 | 5. | 37.5 | 7.5 | 63. |
| 63 | 1.5 | 44.5 | 1. | 47. | 3. | 31. | 7.5 | 63. |
| 64 | 7.5 | 61. | 6. | 56. | 8. | 69. | 2. | 19.5 |
| 65 | 1.5 | 44.5 | 2. | 48. | 1. | 19.5 | 1. | 12. |
| 66 | 4. | 49.5 | 7. | 60. | 3. | 31. | 3. | 28. |
| 67 | 6. | 56.5 | 4. | 51.5 | 3. | 31. | 5.5 | 56. |
| 68 | 5. | 53. | 4. | 51.5 | 6.5 | 54.5 | 5.5 | 56. |
| 69 | 7.5 | 61. | 8. | 67. | 6.5 | 54.5 | 4. | 48. |

**3. Showing persistence of 69 type-difficulties in several combinations of five subject-matter fields as revealed by correlations from ratings made by 97 experienced teachers.[1]**

TABLE VI

| | I. Items of High Rank and High Correlation in Subjects A and B | II. Items of High Rank Sub. A and Low Correlation Sub. B. | III. Items of High Rank Sub. B and Low Correlation Sub. A. |
|---|---|---|---|
| A. Eng. Comp. | 45–3–32–13–9–54–50– | 46–12–55–56– | 15–5–36–17– |
| B. Nat. Sci. | 14–57–19–35–2–21–40 | 53–18–63–20 | 43–4–34 |
| A. Eng. Lit. | 3–57–32–11–54–13–12– | 15–22–46–56–36– | 43–26–2–42–26–35– |
| B. Math. | 9–19–21–18–45–55 | 27–39–20 | 42–5–65–52–25 |
| A. Soc. Sci. | 22–3–43–9–4–19–32–36– | 53–6–12–52–1–40– | 50–34–63–66 |
| B. Nat. Sci. | 5–35–21–46–11 | 18–16–8–2–4 | |
| A. Eng. Comp. | 32–54–3–53–9–55–13– | 35–18 | 43–27–15–39 |
| B. Eng. Lit. | 20–12–46–11–50–14–21–40–45 | | |
| A. Soc. Sci. | 57–43–32–3–9–2–12– | 22–6–4–36–1 | 11–55–42–65–25 |
| B. Math. | 53–19–54–13–5 | | |
| A. Eng. Lit. | 15–3–32–27–54–57–36– | 53–11–17–39 | 45–50–14–20– |
| B. Nat. Sci. | 9–43 | | 5–35–42 |
| A. Eng. Lit. | 22–3–57–32–53–39– | 37–39–55–56 | 43–1–6–2–4–52–5 |
| B. Soc. Sci. | 20–13–12–36 | | |
| A. Math. | 3–32–13–9–43–5–57 | 53–11–25–55–26–42–18 | 45–15–50–17– |
| B. Nat. Sci. | | | 36–14–4–34–63 |
| A. Math. | 32–3–13–12–19–11–53– | 21–43–25–24–5–57– | 18–45–2–46–50–56– |
| B. Comp. | 55–9 | 42–26 | 14–20 |

From Table V may be found the difficulties of high rank in both of the subjects paired in different combinations, and the difficulties having high rank in one subject and low rank in the other. For example, a supervisor could expect teachers of English Composition and Natural Science to have equal difficulty with the problems of adapting subject matter to needs of pupils (Item 3) and developing carefulness in written work (Item 45). These items are shown in the first row of Column I, Table V.

[1] The numbers in each column refer to the type-difficulties as listed on the foregoing data blank.

Also the supervisor would not expect a teacher of Composition to have the same difficulty with discouraging ungrammatical speech (Item 46) as would a teacher of Natural Science. This item is shown in Column II, Row A.

**4. Showing correlation of ratings of 69 difficulties by wholes — for several subject-matter fields.**[1]

TABLE VII

| Subjects | Eng. Lit. | Eng. Comp. | Math. | Prac. Arts | Soc. Sci. | Nat. Sci. | For. Lang. | Prin. |
|---|---|---|---|---|---|---|---|---|
| Eng. Lit. | | .87 | .62 | .34 | .65 | .65 | .56 | .51 |
| Eng. Comp. | | | .66 | .30 | .64 | .64 | .62 | .46 |
| Math. | | | | .41 | .74 | .88 | .59 | .55 |
| Soc. Sci. | | | | | | .77 | .62 | .49 |
| Nat. Sci. | | | | | | | .45 | .51 |
| For. Lang. | | | | | | | | .66 |

Insofar as the foregoing ratings are significant, Table VII shows the extent to which the 69 " difficulties " are uniformly difficult in the various subjects rated. The existence of marked differentiation in the specific difficulties of the several fields is implied by the ranges in " r," for example

For Principals ratings with each subject-matter field, the range is from .46 to .66 or 21, for five major fields.

For English Literature, the range is from .34 to .87 or 54.

For Composition, the range is from .30 to .66 or 37.

For Mathematics, the range is from .41 to .88 or 48.

For Social Science, the range is from .62 to .77 or 16.

For Natural Science, the range is from .45 to .88 or 44.

[1] Coefficients of correlation determined by formula: $R = 1 - \frac{6 \Sigma D}{N^2 - 1}$.

## BIBLIOGRAPHIES

The references to follow are classified under three heads; namely, *A*. Books on General Method, *B*. Books on Special Method, and *C*. References for the Chapters of Part I. The first is designed for the reader who has access to few books and who is chiefly interested in the general field; the second is designed for the teacher of special subjects; the third is designed for the critical student of specific teaching procedures.

The bibliographies for both general and special methods as such have been confined to books, for three reasons. In the first place it is usually easier for the teacher in service to buy or borrow books than it is to locate single articles in back numbers of professional journals.

A second reason for omitting periodical references is that such references are often of only temporary value. The writer has frequently asked instructors of methods courses to state which are more useful in text bibliographies — references to periodicals or references to books. The replies have been to the effect that bibliographical references to periodical literature are rarely used. Periodical references become out of date so rapidly that the best references are more readily located by the indices of bound volumes of the periodical (usually contained in the December issue) than from the meagre bibliographies published in general texts.

A third reason for confining the general and special methods references to books is that such references can be made more nearly complete. So much professional literature appears in book form each year that the data useful to teachers in the study of classroom problems may be obtained very largely from books. An inclusive bibliography of periodical references is prohibited by consideration of space. A teacher may therefore save time by selecting two or three standard books that apply most directly to the given problem. When there is time for a study of periodical literature, useful articles may be found in the bibliographies of the selected books, since the restricted scope of the volume makes it more nearly possible to include all significant articles relating to the problems discussed in the given text.

References to periodical literature are included in Bibliography C since the references are intended not merely to supplement but in most cases to support the contents of the chapters. The articles listed for each chapter present the findings of many experimental studies that are not as yet to be found in book form and that are needed to explain the recommendations contained in the chapters.

The periodical references in other cases are well covered by certain chapters of the books listed in Bibliographies A and B. For this reason the reader should consult these before consulting the periodical references of Bibliography C.

The references pertaining to each chapter of Part I are listed alphabetically by author. This arrangement has proved more convenient than a classified list. Any classification tends to conceal references that may prove highly useful in the study of a given problem but which are so classified that their relation to the problem is obscured. This difficulty is commonly encountered when articles are classified according to the school subjects to which they refer. An account of an experimental procedure in one subject is sometimes more valuable to the teacher of some other subject than accounts of procedures confined to the special subject concerned. It is consequently advisable in planning the study of a given problem to examine all the titles of references listed for the chapters appropriate to the problem, then to consult articles by the more authoritative writers in the given subject, then such other articles dealing with other subjects as also appear to apply to the given problem.

## Bibliography A

### Books on General Method Classified with Reference to Sections of the Manual

The numbers in each column indicate the chapters of each book which apply to the section of Part II appearing at the top of the column.

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| Burton, *Supervision and Improvement of Teaching* (Appleton) | 10 12 13 | 4 5 6 7 8 9 11 13 | 3 9 | | | 14 15 |
| Burton, *The Supervision of Instruction* (Appleton) | 7 8 | 9 10 | | | | |
| Colvin, *Introduction to High-School Teaching* (Macmillan) | 11 | 8 9 10 13 14 15 16 17 | 7 13 | 4 5 6 | 2 | 3 |
| Douglass, *Modern Methods in High-School Teaching* (Houghton Mifflin) | 15 | 2 3 10 11 | 4 6 7 12 13 14 | 8 9 | | |
| Kilpatrick, *Foundations of Method* (Macmillan) | 17 18 | 13 14 15 | | 5 6 7 | 1 8 9 19 20 | |
| Mead, *Learning and Teaching* (Lippincott) | 13 | 14 | | | | |
| Monroe, *Directing Learning in the High School* (Doubleday, Page) | 2 3 | 5 6 7 8 9 12 14 15 16 17 | 10 11 | 4 | | |
| Morrison, *Practice of Teaching in the Secondary School* (Univ. of Chicago Press) | 10 11 12 13 14 15 20 22 24 | 3 4 5 6 18 19 23 25 26 27 | 30 | 7 8 9 | 21 29 31 | |
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| Thomas-Tyndal and Myers, *Junior High-School Life* (Macmillan) | | | | 4 5 | 11 | |
| Touton and Struthers, *Junior High-School Procedure* (Ginn) | 10 11 12 13 14 15 16 | 6 | 8 | | 4 | 20 |
| Uhl, *Principles of Secondary Education* (Silver, Burdett and Company) | 14 15 | | | | 6 7 8 | 4 5 |
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